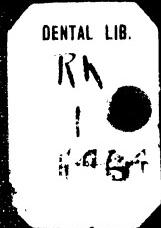
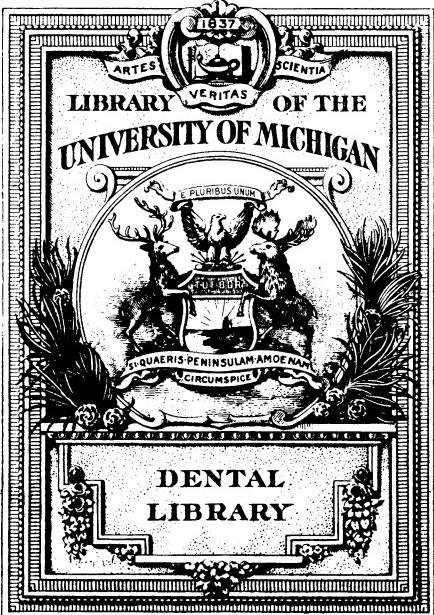


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Progressive Course of Practical Instruction

ORTHODONTIA.

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CHAPTER VIII.

PREVENTION AGE.

If, with our modern methods, we are able to do so much toward correcting irregularities of the teeth and improving the facial appearance, why not begin a crusade against the most common and accessible causes? It is far easier to eliminate the causes, if taken early enough, than it is to eliminate the result of the cause. The work should begin with the babies. Mothers should teach their little ones a correct oral discipline, and that it is a part of their daily life to keep the teeth clean and free from decay; to use the little tooth brush after each meal, using a drop or two of listerine, borolyptol, or any other mouth wash beneficial both to the teeth and soft tissues of the mouth and throat. Impress upon the mind of the little one that there are two things which it must watch for: dark spots or decay upon the teeth, and the teeth that erupt irregularly. Neglecting the baby teeth and finally having 2, 4, 6 or 8 teeth extracted is one of the most baneful and persistent conditions to contend with, and both the parents and dentist should be censured for thus injudiciously bringing on irregularities of the teeth and facial deformities. If a child is carefully taught to care for its teeth, the act will soon become a part of the daily life of the child, and a visit to the dentist is anticipated with pleasure instead of fear. Little children should be taken to the dentist as often as the adult goes, for it is a splendid plan to prevent future trouble by carefully caring for baby's teeth.

Mouth breathing is one of the conditions that so often mar the beauty of the prettiest child, making it stupid looking and unattractive. The proper way to breathe is to keep the lips closed and breathe through the nose. Mouth breathing may sometimes be the result of a habit, at first, but is usually the result of foreign growths in the throat and nose. At first one may breathe through the mouth at night while asleep, and finally, as they grow older, continually night and day. Many evil conditions result from mouth breathing,

such as malocclusion of the teeth, impaired speech, undeveloped nose, catarrh and throat diseases, etc. Every parent should be instructed to watch for the first signs of mouth breathing at night. If the little mouth is open while asleep, close it with the finger and hold it there a few minutes until it stays. If no improvement takes place, a specialist should be consulted for growths in the nasal passage and throat, in some cases it may become necessary to wear a broad bandage under the chin and over the head at night to keep the mouth closed until normal breathing has been established. Dr.



Fig. I

Thompson suggests the use of a strip of court plaster about one-quarter inch wide and one inch long. The lips are closed tightly and the plaster applied perpendicular'y and held there until it has firmly adhered. Remove next morning with warm water.

In case the little child's nose is not developing properly, but is developing into one of those little pugs (due to mouth breathing), that is very cute while young, but very annoying after maturity, the mother should be instructe-l to develop it by gently stroking the nose downward between the thumb and the first finger several times a day from 15 to 20 minutes at a time. It is while the bony sub-

stance and the cartilage are soft and yielding that the different parts can be moulded and contoured into better forms.

Short upper lips should also be developed by stroking downward with the first finger in the form of a bow. The child should be instructed to often draw the upper lip downward with the lower lip. The author finds that mothers are always ready and willing to adopt such methods of improving and developing the little one's features. What can give more pleasure and joy to parents than to have a healthy, well-developed, laughing child? Fig. I.

It is a well-known fact to the profession that almost every case of malocclusion has its foundation laid in the six or eight years of time intervening between the ages of six and twelve or fourteen years. Should it then not be the duty of the profession during this intervening time, of six or eight years, to carefully watch for maloc-



Fig. II

clusion? The arches should be enlarged or contracted as the erupting teeth may demand, teeth rotated to alignment, space preserved for tardy erupting teeth, and the occlusion of the teeth carefully guarded against retrusion or protrusion of the lower jaw, for this last condition, in almost every instance, has its foundation laid between the age of six and twelve years.

In plain words, simply aid nature in developing the alveolar process to the normal size, and thus aid the teeth to their proper contact.

We seldom find malocclusion of the temporary teeth, due to the fact that at birth the jaws are large enough to accommodate all of the temporary teeth, and when they erupt they do so from before

backward. And there is no opportunity for the temporary teeth to be changed or forced from their normal course of eruption, so unanimously found in the jumping back and forth eruption that



Fig. III

takes place between the centrals and the first molars of the permanent teeth.

The proper diagnosis of a case of malocclusion prior to treatment with appliances is as important as the treatment itself. After a

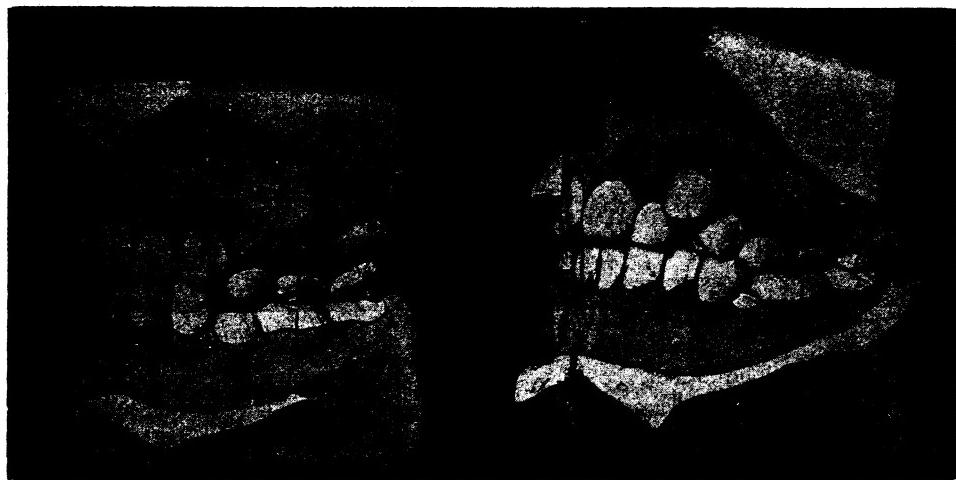


Fig. IV

definite plan of treatment has been outlined, founded upon a correct diagnosis of the occlusion, it is then easy to execute or carry out this plan. The attempt to regulate cases with only a view to alignment of the teeth and without effort to restore harmony in the size of the arches, usually means failure in retention. If harmony of the arches is not obtained, the teeth are bound to return sooner or later.

As occlusion is the basis of orthodontia, a thorough diagnosis of the occlusional alignment of the teeth for a harmonious occlusional contact is necessary. In this diagnosis we have to consider models, age, occlusion of each individual tooth and method of treatment.

It is necessary to have models as an aid and guide in the treatment and retention. Mark the model of the buccal surface of the upper first molar. Draw a lead pencil mark down over the mesio-buccal cusp, passing down over the buccal surface of the lower first molar on both sides. Mark the cuspids the same way. If the lower first molar is in normal occlusion, then this line will pass between the mesial and distal buccal cups of the lower first molar. (B, Fig.



Fig. V.

2.) If the molar teeth are not in normal occlusion, then draw a line on the upper first molar where the line on the upper first molar should come in normal occlusional contact, as in A, Fig. 2. This will indicate at a glance the condition of the occlusion of each case, which is the basis for comprehensive treatment.

Early interference is always the best. If the first permanent (incisor) teeth begin to erupt malpositioned, then the case is ready for mechanical assistance. As a rule, if such early conditions are allowed to continue, they can only grow worse. When treatment begins early the teeth can be moved much more easily and with better results than later in life, for early treatment aids nature to develop to the normal; whereas, after the teeth have erupted out of alignment it is necessary to eliminate the established condition. When the condition and position of the teeth are favorable for moving, change can be made as late in life as 35 or 40 years. The most favorable time for treatment is from 6 to 12 years of age.

The future treatment depends upon the diagnosis. Start with the second molars, if they are present; if not, the first molars. Have the patient close the teeth. Note the occlusion of each tooth, moving slowly around to the anterior teeth and then around to the opposite side. Mark on the model the distal teeth that are out of alignment. Make a note of the teeth that are missing or supernumerary teeth that may be present. Draw the median line in front where it should be and where it is. Then if it becomes necessary to extract, this will show the side to extract on for improving the median line and correcting the position of the anterior teeth (A and B, Fig. 3).

The first consideration, if cases are presented early enough, is to restore all to normal occlusion, whether it be one or more teeth, or the movement of the lower jaw. After the age of twelve years two things must be considered: the possibility of marring the facial outline, and only a possible chance of moving the lower jaw if its position is involved. In a case like B, Fig. 4, if all of the teeth were moved forward into normal occlusion, the lips would not only bulge out, but the teeth themselves would project forward. In preference to marring the features it is best to sacrifice one or two teeth, as was done in this case. While the preference is always to restore to normal, it is often necessary to extract for the sake of the facial appearance, as was done in A, Fig. 4, the first bicuspid being extracted on each side. If, however, some one has extracted a tooth early in life and the sacrifice of another tooth would only increase the condition of the malocclusion and entirely mar the facial outline, then it is best to enlarge the arch and place an artificial tooth where the one was extracted, as was done in Fig. 5.

Harmony of the arches must be secured if permanent success is desired. The preference is to restore the teeth to normal occlusion, but it is not necessary to have normal occlusion of all the teeth in the arches to secure harmony of the arches. By harmony of the arches the author means that if the upper is too large for the lower, the lower must either be enlarged to conform to the lower, and vice versa. Or, if the lower jaw is protruded or retruded, move it forward or backward if possible. If protruded, then reduce the size of the lower and enlarge the upper anterior part until a more harmonious relation between the two shall exist.

After a careful consideration of the teeth, number and position, the appliances that will be best for the particular case are then prepared and put on.

To be continued

PROSTHETIC DENTISTRY

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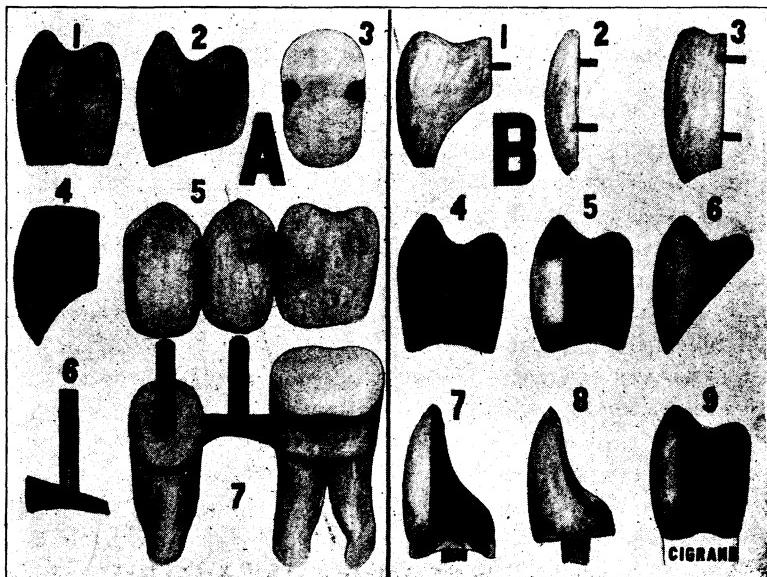
Chapter XXVII

During the past half century the advancement of the art and science of Dentistry has surpassed the progress of any other vocation and today it stands among the learned professions. To this happy era in our calling the American dentist has liberally contributed. The glory of establishing nearly all the potent elements of dental progress is the cherished record of the American practitioner. The mechanical appliances, various labor-saving devices, materials and discoveries chronicled by the Americans, are so numerous that mere specification of their contribution would consume hours of time. But there are other elements to which the profession owes its present high standing. These factors: The introduction of gold for propholactic purposes, invention of porcelain teeth, organization of dental societies, founding of dental colleges, issuance of professional journals, employment of the microscope and establishment of dental supply depots.

In this article I hope to confine myself strictly to porcelain, and to its influence on prosthodontia. To porcelain the art of dentistry owes its very existence. Without this important substance the life-like reproductions of the natural teeth would be an impossibility. No substance has a brighter future than porcelain, for it is a material in which not only the beauty of expression can be attained, but gives evidence of the highest aesthetic cultivation, and links to that beauty the additional tri-attributes of usefulness, durability and hygie.

Dr. C. N. Johnson has aptly said that gold is the poetry of operative dentistry, and he might have added that porcelain is the mother of prosthesis; for without this mouldeable and modifiable substance our artificial dentures would still be produced from old bones, ivory and other destructible animal tissue. Porcelain or mineral teeth, though of French origin, owe their perfection to the untiring efforts of American ingenuity. A Frenchman, Debois de Chant, is commonly credited, in 1788, with the invention of what is known as mineral teeth, but these are not like the modern porcelain teeth in either composition or appearance. To A. A. Plantau and Charles W. Peale must be awarded the honor of manufacturing in 1820 the first porcelain teeth.

The gradual improvements of these artificial teeth into the various shades and innumerable shapes does not enter into this paper. But the evolution of the present adaptable porcelain teeth or crowns requires that the mere mention of the inventor's name and the date of production be given; though it is unnecessary to describe these or present illustrations since only such crowns as are in accord with the purpose of this paper, will receive consideration. These early inventions are: In 1822, C. W. Peale; Dr. Foster, 1849; M. L. Logan, 1869; Dr. Lawrence, 1873; Dr. J. B. Beers, 1874; W. H. Gates, 1880; Dr. C. M. Richmond, 1881; Dr. M. W. Webb, 1882; Dr. W. G. A. Bonwill, 1882; Dr. W. S. How, 1882; Dr. H. K. Leech, 1885.



Before entering into a discussion of the crowns which have come into use since 1885, privilege me to make the following classification of crowns in order that you may more clearly comprehend the object of the paper. The great variety of crowns which are at our command may be divided into three classes: First, those of porcelain, second, those of metal, and third, those of both porcelain and metal. These three grand divisions might be subdivided into three groups, namely those which band the root (either circum or intra-dental) next those which depend on a post, and lastly those which are anchored by both ferule and post.

Of the innumerable methods advanced for crowning or substituting teeth none can be advocated as the universal or best, each has an

undisputed territory—all have meritorious features and all share in shortcomings. It therefore remains for the operator to decide which of the methods or systems is most preferable. Yet in all this diversity we ought to analyze the merits of these methods as to arrive at some definite conclusions and institute a classification which may be of service both to the student and the practitioner. In operative dentistry the technic of cavity formation through the indefatigable efforts of Dr. G. V. Black has become universally adopted and his anatomical nomenclature so perfected that the profession has gladly accepted, with slight alterations, all he has proposed. If a similar status could be attained in prosthodontia, incalculable good would result. We are as yet hampered in prosthetic work, in that we have not a true medium of mental exchange, when we accept or agree upon a complete terminology we shall have a channel through which we may safely send thoughts on any branch of this department of dentistry, without fear of misconception. The National Technic Association has done something in this direction, but nothing of a decisive character, and the effort thus far has been limited entirely to the student technic rather than to practical infirmary work.

The classification which was made of the individual crowns will answer for bridges as well, for a bridge is but assembled crowns. The assembled crown case might be divided for convenience of description into the mesio-pillar and disto-pillar or anchor, while the suspended artificial teeth might be known as the intermediate substitutes. The location of the case in the mouth with reference to the situation in either the upper or lower jaw and also the designation of the right or left side, as well the anterior or posterior portion, can be given with accuracy in the following terms:

Supra—Dextro—Labio—Assemblage.

Supra—Dextro—Bucco—Assemblage.

Supra—Sinistra—Labio—Assemblage.

Supra—Sinistra—Bucco—Assemblage.

Infra—Dextro—Labio—Assemblage.

Infra—Dextro—Bucco—Assemblage.

Infra—Sinistra—Labio—Assemblage.

Infra—Sinistra—Bucco—Assemblage.

Conservative practitioners throughout the broad land have gone back, so to speak, to the small bridge or assembled cases. The professionals have recognized the error of the enthusiastic bridge-builder who enthusiastically spans between two natural teeth an attachment of five or even eight artificial teeth. They have observed that the hastily constructed Richmond crown with ill-constructed ferule has inaugurated a siege of peridental and alveolar troubles;

they have carefully noted that the all-gold telescope advocate who so eagerly caps a slightly decayed tooth has outraged his profession, and all this has taught the conservative practitioner that no tooth must be subjected to a process of crowning unless the restoration of the neighboring teeth absolutely indicates such a procedure. Dental elimination and annihilation, or aphaoritic operations, properly fall to the oral surgeon and have nothing in common with dentistry, which has come to mean dental preservation.

Conscientious practitioners throughout the profession are ever reluctant about substituting an artificial crown when conditions demonstrate that a filling could be anchored promissory of dental preservation. I believe the better operators are in favor of saving a badly decayed occlusal surface by means of oxyphosphate filling, and at intervals as the material dissolves, refill with this composition, rather than to cut down unduly the tooth and subject it to a collar or barrel crown. If we are to refrain from one thing it is cutting too freely what nature intends and demands shall be retained. It would be a wise rule to follow in all departments of dentistry to preserve as much tooth structure as is possible without liability of abridging the durability and usefulness of the operation.

In diagram A, figure 1, we have the first porcelain crown containing platinum. This was invented by Charles W. Peale, who distinguished himself by serving Washington professionally and painting the most authentic likeness of the great American. The porcelain tooth had a platinum tube in the center which allowed the metal bar to rivet it to the support. Figure 2 is the Harrison tooth, patented in 1856, and had a groove mesially and distally, receiving complementary metal stays. This tooth depended upon being cemented into a metal receptacle.

Figures 4 and 5 are the English tube teeth and are virtually the same as the Peale teeth. They are attached to a metal post and cope, as shown in Figures 6 and 7. The palatal or lingual contour by this method can be fairly well restored; but they are held in position by means of molten sulphur, and this agency has not yet proven to be without fault. The cusp outlines are far from being anatomical.

Diagram B—Here we have the early cube tooth with the platinum pin so situated as to allow easy attachment to the gold, Fig. 1. This tooth is not constructed to withstand serious strain, as the masticating force exerted on its external surface would necessarily cause the porcelain to fracture. The cusps are flat and indistinct and have irregular grooves, supposed to represent the sulci of the tooth. Figure 2 represents the porcelain veneer, and unless this mere shell is

protected by metal its career of usefulness must indeed be brief. Figure 3, though slightly thicker than the preceding, nevertheless shares in the same criticism. This tooth, known as the "facing," is much used at present by many prosthodontists, but the cusp outline, as well as the method of attachment, need improvement.

Figure 4, all gold telescope crown, invented by Dr. Lawrence in 1873, and this crown is quite generally employed today in assembled cases. In 1880 Dr. C. M. Richmond improved Figure 4 by adding a porcelain veneer on its labial surface, as seen in Figure 5. This latter method was improved by Dr. Rolla Knapp, in 1886, so as to display less gold and extending the porcelain to the cutting edge, Figure 6.

Dr. Prothers said: "In 1866 or 1867, the late Dr. W. N. Morrison, of St. Louis, invented Figure 4 and gave it to the dental profession. He did not hide it under a bushel, but published a description of it in the Missouri Dental Journal, in 1869, I think, and many of the older dentists of St. Louis today remember it. Dr. Morrison deserves credit for this crown as well as for many other useful things, among which may be mentioned the Morrison chair, and the dental engine bearing his name, which he, together with his brother, Dr. J. B. Morrison, of Kansas City, invented.

"I cannot understand how this shell crown came to be credited to Dr. Lawrence, since Dr. Morrison's published description of it preceded, by several years, the date at which Dr. Lawrence is credited with its invention.

"Dr. Morrison, with his assistant and books, at one time went to New York as a witness in one of the cases brought by the Crown Company against some dentist, and through the testimony he was able to produce, in regard to the crown in question, the case was decided against the plaintiff."

Figure 7 illustrates the modern Richmond crown with accurately fitted ferule over a properly shaped foot.

Figure 8 represents the Logan crown which approaches nature nearer and gives universal satisfaction in cases where the root is strong and properly fitted. And when attached by means of both gutta percha and cement is promissory of excellent results. When set on weak roots it will be necessary to add strength to the root by means of either an intra-dental or circum dental band.

Figure 9 shows the Richmond as improved. The porcelain veneer is soldered to the gold telescope, and it adds considerably to the appearance of the crown.

(To be continued.)

DENTAL THERAPEUTICS

(By Geo. W. Cook, B. S., D. D. S., Chicago, Ill., Professor of Bacteriology and Pathology, University of Illinois, Professor of Oral Surgery, Dearborn Medical College.)

CHAPTER XXVIII.

In the discussion of the subject of quinine and its therapeutic uses we called attention to several phases of its important uses in certain dental disturbances. Notwithstanding the fact that the limitation to the administration of internal drugs by the dentist is, perhaps, much greater than it should be, owing to the fact that they are only dentists, signifies to the medical profession and to the laity that they are unqualified for passing an opinion or even suggesting a remedy to be administered internally for the assistance of a local disturbance, and especially if it be a dental disturbance. But notwithstanding all of this, it is our duty to ourselves as well as to our patients, that we go straight to the cause or as many of the factors that enter into local disturbances and study the therapeutic remedies, that are beyond question of importance in setting right some of the disturbed physiological processes that are constantly at work when there is any local lesion present.

Right in this connection, we will take up briefly, the consideration of vegetable purgative preparations. It might be said that the ideal purgative would be one that would pass through the stomach without creating any disturbances whatever until it had reached the intestinal tract, and there act in such a way as to completely evacuate the bowels without disturbing any of the physiological functions of the body, but as yet no such remedy has been brought to light.

In the discussion of the subject of the inorganic salts and their use as purgatives, we attempted to show that the action of these salts was, very largely, due to their drawing from the tissues into the intestinal tracts the fluids of the body. As is known by all who have given the subject any consideration, the occlusion of the bowels or the stoppage in the intestinal tract is most commonly due to the tissues taking up the moisture and leaving the fetal matter in a dry state, and in this manner producing the well known condition, constipation. After this condition has remained in this state for some little time, the decomposition processes produced by bacteria sooner or later brings about the liquefaction of the contents of the bowels in a way that occasionally the mass becomes broken up and passes

away in the usual way. But before this material has been reduced to a state in which it can pass away, there, perhaps, is already forming at the upper end of the large intestine, another mass of material that is again to go through the same process and again to be the source of a slow decomposition, and during the time that the contents of the bowel is repeating this for a few weeks, months or years, the individual is taking up from the intestinal tract many of the decomposition products that have a detrimental influence on the human organism, and, as I have previously stated, the individual is suffering from the condition that is usually termed autointoxication. In a sense it might be termed autointoxication, but as a matter of fact, from a strictly biological sense, it is not autointoxication at all; for the writers on the subject of autointoxication interpret the phenomena as a condition brought about by the cells of the body that produce all of these symptoms, which the intellectual and well informed physician at the present time knows is due to faulty metabolism which originates in the intestinal tract, and can be relieved many times by the selection of a proper remedy, or many times proper exercise, diet and hygienic surroundings.

In the study of the saline cathartics, we found that they sometimes produced irritation of the epithelial cells and their absorption of moisture from the tissue was the way in which they produced their cathartic effects. The vegetable purgatives act more as an irritating agent, thus producing the secretion of the intestine and especially its granular structure. In some instances, however, there may be no changes produced in either the agent or the contents of the stomach, thus passing through the stomach unchanged into the intestinal tract; for example, castor oil passes through the stomach almost entirely unchanged, and by certain digestive conditions, the change in this agent takes place only when it has reached the digestive processes of the intestinal tract.

The many classifications of purgatives is the result of basing the name on the effects that they produce; for instance, laxative, purgative, cholagogue, hydragogue, cathartic, drastic, eccoprotice. Such classification is burdensome and really means but very little in a scientific manner, for many of the things that are used for evacuating the intestinal tract might be classed in any one or all of these classifications, and no one has been able to determine any definite line of demarcation between any of these. Probably the most scientific classification and the one that will clear up in the minds of those

who are interested in the subject, is the classification given by Cushing; first, the purgative oils; second, the purgatives of the anthracene series; third, the jalapin group.

In the purgative oil series, the castor oil (*oleum ricini*) resembles olive oil in a great many respects, through in the saponification of this agent, ricinoleic acid is formed instead of oleic acid. This last named fatty acid is the produce of the saponifying of olive oil, while the former is the result of the saponification of castor oil. This last named compound, the chemical formula of which contains an unsaturated hydroxyl group, the chemical formula is usually written ($C\ 17\ H\ 32\ (OH)\ COOH$). As we have just said, castor oil itself is a bland substance and produces but little irritation until it passes through into the intestinal tract, and through the digestive juices of the intestine, the oil is broken up, forming ricinoleates. When this substance is set free in the intestinal tract, it causes an irritation and in this way produces the purgative effect that is so manifest in the administration of castor oil. Meyer in his investigations of the chemical constituents of castor oil, found several esters of ricinoleic acid resembling, in some respects, the esters of glycerin.

Croton oil is decomposed into glycerin and crotonoleic acid, the chemistry of which is but little known, but in many respects is quite similar from a chemical point of view from that of ricinoleic acid. The acid form taken from croton oil is much more irritating than the one taken from castor oil, which may account for the fact that the croton oil is very irritating to the skin and mucous membrane. It has been found, however, that this free acid, found in crotonoleic acid, can be removed and the purgative effects of the croton oil still be preserved. This certainly has a very important bearing upon the future possibilities in the use of croton oil as a purgative, as it is one of the most irritating of any of the agents that we know of at present, even when administered in the minutest doses.

Castor oil is absorbed from the intestine, and is taken up by the tissue in the ordinary way that fats are, apparently, utilized by the body substances. Castor oil may be given in very large quantities without producing any symptoms of special importance other, perhaps, than its laxative effect. This is demonstrated by the fact that in China castor oil is used as an article of food.

In the castor bean, from which these two oils are taken, there is to be found toxalbumins, which were thought at one time to be the

real agents that caused the action, or more properly speaking, the poisonous products of the oils. But this is not true, for it has been found that the oils are entirely freed from any of these poisonous agents that are classed as toxalbumins. The true chemical nature of many of these oils is not very well known, neither is it known as to just what the effects castor oil may have on the true fate of this agent in the tissue, but presumably like that of other oils or fats.

According to the classifications above mentioned, the next vegetable purgative, the so-called anthracene, belongs rhubarb, senna, aloes and frangula. All of the above named compounds owe their irritation to this chemical compound anthracene (C 14 H 10). It might be said in passing, however, that but few of these have been isolated and that the chemical process that is required for the study and isolation of these chemical constituents is only accomplished with great difficulty, for the simple reason that many of them contain extremely active principles and each of which is closely allied to the other. There have been a number of complexed substances isolated in almost a pure state, but as purgatives they have but little value; however, in some instances they have not proven to be entirely void of purgative effects. Several of the pure principles, such for instance as the chrysophanic acid, do not cause any purgative effect specially, because they are rapidly absorbed. Frangulin and cathartin have been used experimentally, but they undergo decomposition so rapidly that they are of but little value as at the present time produced. Aloin is not as certain in its effects as aloes, but is rapidly changed into an amorphous compound which has very irritating effects. The purgative effect in aloes is increased by the presence of small quantities of alkaline salts and iron. It seems, however, quite essential that there be present in the intestinal tract at least a small quantity of bile in order that the full effects of the aloes may be obtained. Kohlstock showed that this could be overcome, to an extent at least, by the injection of glycerin as an enemata. The probabilities are that the effects derived from both the glycerin and the bile is purely one of a solvent action.

Various effects have been produced by the subcutaneous and intravenous injection of these active principles above mentioned, and the use for which they are ordinarily applied is that of a purgative on the intestinal tract. Rhubarb contains, as is well known, tannic acid which has a very astringent effect upon the intestinal tract after the first evacuation of the bowel. It many times happens that when

rhubarb or aloes are administered internally their effects following the immediate action is in many respects a detriment rather than a benefit.

Perhaps one of the most essential compounds in the series above mentioned for cathartic effect is that of castor oil. It is mild in its effects and is non-irritating, and as we have just seen, it can be taken up and utilized in the body, not in a detrimental manner to the physiology of the body, but possibly beneficial.

One of the great sources of discouragements many times in the administrations of drugs is that the after effect is worse than the disease. Many people become habitual users of cathartics and many other individuals suffer headaches, rheumatism and various complications that render them many times incompetent to enjoy life, when if they would systematically diet, exercise and intelligently use agents that would bring about or, in other words, restore to physiological function in the intestinal tract, it would relieve many of the predisposing conditions that bring about all sorts of infection in the oral cavity.

(To be Continued.)

OPERATIVE DENTISTRY

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CHAPTER XXIX.

The Treatment of Decay in Pits and Deficiencies of Enamel in Incisors.

It is frequently a problem how to fill some of the cavities found in the anterior teeth and get good retention without weakening an already frail organ; and especially incisors that come to a very thin edge.

Not infrequently pits and decay are found at the incisal edge, or a line or so above labially, which the operator is called upon to fill with gold; though in the light of up-to-date aesthetic practice, gold should rarely be used. Porcelain inlay work has largely superseded gold for anterior teeth, among such operators as have become proficient in the art, and there is no question but what its use is the best and most rational method with which to make restorations that are more or less exposed to view, when the conditions will permit of it.

In many instances cavities with small orifices need so much opening to be able to fill properly with gold, that the display of that yellow material is unusually objectionable; while if porcelain is to be used this enlargement cuts but little figure, since the restoration closely resembles the natural tooth.

But, since many dentists are not prepared to fill with porcelain and patients are not able or willing to pay for this higher style of art, gold must be used. It is important then that the operator study the case with a good deal of care, to obviate the display of an objectionable color.

Frequently a number of pin point pits must be filled, and unless the decay has undermined the enamel between the pits, the tooth substance should be left between and each pit filled separately.

Many of these pin point pits—most of them in fact—have funnel shaped openings with strong healthy enamel converging to decayed point at the center. Unless decay has burrowed under this enamel it should be preserved. A small rose burr should be used, and the opening made no larger than necessary to remove the decay, and get good retention; which is easily secured without undercuts in this class of cavities.

In a cavity of this kind the writer finds crystal gold more convenient to use than foil, though the latter may be used if the pieces used are small enough to be readily passed in without much compression, until ready to condense and wedge into the bottom of the cavity.

Now, if such a cavity is filled up flush with the surrounding tooth surface, it will be many times larger than its base; while no well defined margin can be made on such a flaring slope. It is better, therefore, to stop considerably below the level; for, such a depression as will be left, is decidedly more aesthetic than the enlarged spot of gold that would be the result of filling the funnel full. And all has been done, too, that is necessary to prevent recurrence of decay, provided, of course, the filling has been properly built and finished.

The finish of such a filling should not have a straight across surface, but should be saucer-shaped, and nicely polished; so that food that may collect there may be easily removed.

Not infrequently there will be found a chain of these minute pits so closely approximating—clear across the tooth perhaps, and these are at the bottom of a depression of the enamel,—that they must be cut together in a channel.

Now, the same rule usually holds good in regard to filling the channel full, or rather not filling it full, as has just been noted above. That is, when the enamel along the channel slopes away as the level is approached, and is good and sound, no wide band of gold should be made by filling it up level. Of course, where the enamel is defective along these slopes, that is a different proposition.

Here, again, the porcelain inlay would usually give better and more satisfactory results if correctly made.

Not infrequently the operator confronts a proposition where the enamel has been decidedly nicked or chipped out so that something toward incisal restoration must be done.

Now, on the thin cutting edge of a tooth, with all the wear and tear there that comes on it, neither a gold filling nor an inlay is going to remain long without more cavity surface than can be got at such a thin edge.

What is to be done? Preserve all of the labial aspect that can be, especially if gold is to be used; and extend the cavity liberally up along the lingual aspect, and get retention, as much as can be, or entirely, at this point. It is not necessary to describe the shape the cavity must have to give retention and stability; suffice it to say

there must be good, firm anchorage, and the bulk of gold that comes to the cutting edge through the notch must be sufficient to withstand such wear, tear and strain as it is likely to have in such an exposed position. It is almost invariably good practice whenever a gold filling must be built along the incisal edge, to get bulk enough to give strength by cutting away the lingual plate of enamel far enough to obtain this result, channeling between the plates enough for retention and leaving a layer of dentine on the labial plate if possible. A layer of dentine should always be left on enamel at any point when possible; but in these incisal cavities leave the thick heavy lingual plate without enamel if either. It is not reflected through as when it comes next to the labial plate, and, of course, the edge of enamel is carefully covered with gold in the proper building of the filling.

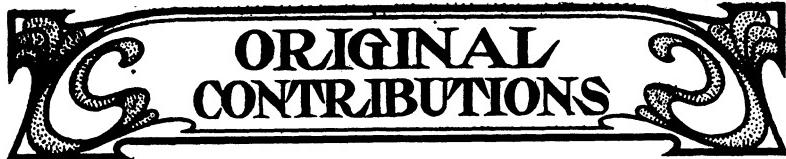
A filling made in this way has a good base, while one built into a narrow channel where the lingual plate is left quite as far down as the labial is very sure to be dislodged, frequently with a chipping away of the labial plate which we desire especially to conserve. A considerable fracture of both plates of enamel, and especially the labial may occur, by attempting to fill in the latter way. The filling, under strain, acts as a pry or lever to split away the enamel, while with the strong and comparatively heavy base and better anchorage previously described, the leverage above spoken of is eliminated.

Decay rarely occurs at the incisal edge of perfectly developed teeth, the pits and depressions referred to being a feature of interrupted development and are there when the teeth come through the gums, and decay occurs when the deficiency has little or no enamel in the bottom of the pits or depressions.

Of course, we find this same sort of deficiency midway up the tooth or near the cervix and the same rule holds good that a depressed gold filling of small proportions looks better than the consequent larger one when an attempt is made to bring it up flush with the surface. The nearer the approach to the surface in these gradually widening pits and channels the less able the operator is to define the margins, as the gold becomes too thin and attenuated at the edges to preserve its integrity.

The same problem is met with in filling some of the fissures in bicuspids and molars. The cusps, however, of opposing teeth usually require the hollowing out of the filling if the fissure has been filled too full.

(To be continued.)



ORIGINAL CONTRIBUTIONS

TOOTHSOME TOPICS.

By R. B. Tuller.

Yimmineyumpinyakass! Yas, you bet!

You bane da dentistman?

Da matter with me, hey? Ay tole you, Doc. Ay got toot up yare an haar bane aken lak wexteen ton trip hammer-dammer, yump, yump, yump; yumpity-yump-yump. Yas.

Say, Doc, you goot fallar? You pullen and dond hurt? You know, you taken out easy, Doc? Huh?

Oh, Ay got sand, Doc—plenty sand fer kick and tump an knock, an das no lie. Ay have four leg cut off—yas, sure, Ay could, an no kicken or holler; but das toot, Skezus! haar got holt on yaw lak das eagle claw, an haar never lat go, sometimes alvays. Oh, yas, Ay know.

In Norvay, Doc, Ay dond never had toot-aken, but aver sent Ay come to Amerika, Ay bane had toot-aken var much, an das no lie.

Naw, Doc, Ay dond lak setten in das chair; haar bane funny looken chair. Maybe Ay dond can getten out. Ay stand yare by da vall, an you tak a look. Yas, das oll right.

Skezus! Doc, Ay bane skare of you. You dond got something in your hand?—ner up your sleeve? Vell, oll right, tak a look.

Ay bane skailor man on da Norway sea an Ay sneaken up on da whale an trow da harpoon un den got knock forty feet, un da boat smashen un Ay schwaller da beeg vave un drown already more dan half, un Ay dond schqueal some, dough Ay look det in da vase; but by da yumpin, yimminie yackass! Ay dond lak das toot pullen.

Naw, naw, Doc, Ay dond lak for setten down; Ay vas skare lak hal.

Ay go avay, Doc, un come some more damorrow next veek, an Ay sckall brang my ole vooman for hole my het. Yas, haar sckall come up un hole my het, so haar dond pull up an bump back.

Yon Yonson haar tole me for hole some visky in my mout, un das been a goot ting, un das no lie. Ay bane hole visky lak haar

say, un da toot ha quivt. Den Ay lat da visky schlip down my troat, for haar bane too goot to spit out.

Bambye da toot haar begin again, un Ay hole some more visky in my mout, an pretty soon bamebye haar stop, un Ay bane schwaller das visky some more. Haar bane goot stuff, an das no lie, un Ay feel bully.

But bambye haar come back, an haar hollar worse as before sometimes all ready.

Yas, Ay bane logger-man up by Visconsin, un Ay bane in da voods and sometimes already Ay fite da vild-cat un Ay bane got bite un scratch yare, an yare, an yare, un Ay dont mind that.

Ay bane in log run in da river un Ay get in bad yam, un det say, "Ole, Ay bane got my eye on you," un Ay say, "Go vay! go vay! Ay am bizzy." Yas, das no lie. But, say, Doc, Ay veaken ven Ay tank about toot pullen.

Ay bane hard kick by mule; Ay bane stung full of bumble bees; Ay bane knock down an run over by autowobbles, an Ay bane kill wexteen time half; but toot pullen—Say, Doc, haar var vorse dan vorser tings.

Ay ha bane skiprack on da sea, and no grub for eighteen day—das no lie, and Ay vish Ay vas skiprack now already again. Yum-pity-yump-yump. Yumpin Yimminie Yakass! Ay go home, Doc. Yas, Ay go home and get some sand. Ay come back damorrow next week. Good-bye, Doc. Ay brang da old womans.

(Toothsome Topics every month)

THE DENTAL ERA.

Dr. J. H. Kennerly and Dr. Hermann Prinz are editors of the John C. Nolde Dental Era. Dr. Kennerly was recently elected president of the National Association of Dental Faculties. Dr. Prinz* has been unanimously elected to matrimony. And Friend John is busy spending the \$1.39 he made on the Dental Era last year. So for the above said several and valid, also lawful, reasons, the above said gentlemen did feloniously and with malice aforethought without thinking, neglect to give the American Dental Journal credit for the article published in the June American and in the August number of the aforesaid Dental Era, entitled: "Toothsome Topics, by one Rollin B. Tuller of the City of Chicago, and County of Cook." The culprits should be "Hot potted." (See "She," by Rider Haggard.)

*See Personal and General column for particulars.

PARTIAL DENTURES.

By L. P. HASKELL.

While the bridge has its place, and is often the best thing to do, yet there are cases, not a few, when a nicely fitted gold plate with carefully adjusted clasps, is better for the patient.

These cases are when there is so much strain on the bridge that the piers are soon loosened and the bridge is a failure, while the yielding plate does not cause such a strain on the clasped teeth.

In constructing a partial plate, the plaster impression is preferable. The teeth should be cut off the plaster model, because the case can be moulded and swaged the better, and there is no reason for retaining them, but before doing this, shape the clasps to the teeth, and leave enough of the teeth to indicate position in swaging and trimming.

In making the pattern for the gold, use the Japanese tea chest lining. Do not cut the teeth shape from the pattern, but cut from the gold with plate nippers after swaging. -

Use 20K gold, gauge 28, but double half the width of the plate, with 30 gauge. This makes a much stronger plate than a single thickness, though much thicker gauge. To solder the two, leave the margins where the teeth are uncut to lay the solder on, after having boraxed both surfaces, and clamped together with the small iron wire clamps, and solder, after which cut out the teeth openings, file in shape and try in the mouth. With the mouth mirror examine and see that the plate does not imfringe upon the necks of the teeth.

The only proper clasp material is alloyed with a little platina, there being no spring without it. The average width of the clasp should be about 3-16 of an inch wide. The ends to be rounded and bevelled. These should always be adjusted to the plate in the mouth, one at a time. Spring the clasp open a little so it can readily be removed, then with a good amount of ordinary wax, well warmed to the plate and clasp, put in place and with mouth mirror examine, and if the clasp is not exactly in place, adjust with an instrument. Then pressing the wax firmly, carefully remove, turn bottom upward on paper and invest just one end of the plate and clasp in plaster and sand or pumice. Removing the wax, wiping off, while warm, all traces, apply the borax and solder, but uniting the two for only one-quarter inch so as to leave free movement of the clasp. To prevent the solder flowing too far, press a little plaster of the invest-

ment with point of spatula into the crevice each side. Try in the mouth and if the clasp is not exactly in place, file it off and readjust. The method of holding clasp and plate in place with an impression in plaster is not safe, for if the clasp or plate move it is not discovered until soldered.

Put the plate in place and take the bite. For this purpose, the modeling compound is preferable.

At this stage there is now an unfortunate condition of affairs. Often in these partial plates gum teeth are needed, and to my dismay recently I found that Justi had given up their manufacture, and the stock on hand has been returned to be broken up. These teeth were the best shaped of any ever made. I went to White's and found a small and poor stock. So here we are, and owing to the fact that the extensive use of the bridge has caused but little demand for gum teeth, the only recourse is the use of the rubber gum teeth, or the rubber gums. Of course, there are many cases where the gum tooth is not needed. The flat tooth can be fitted to the gums.

For cheaper work, silver, with a little platinum alloy, can be used, and this can be soldered with 18K gold solder being far preferable to silver solder.

THE SULTAN'S DENTIST.

Men whose word is not to be doubted tell us that a gardener rising at the approach of the Sultan to salute has been shot dead by the latter in the belief that assassination was intended; that a brusque movement, a quick step, even a rapid change of movement on the part of an attendant will bring the Sultan's hand upon his revolver, and some inoffensive man dies. His meals are carried to table in sealed dishes, and each course must be tasted first by the Minister; while after the Sultan has eaten, his courtiers are compelled to finish the remainder. A story is told by Mr. Tuckerman, the diplomatist, of a tooth which the Court dentist was often summoned to extract, and as often sent away with the tooth still aching in its old place. "I have been to him repeatedly on this errand," the man told the ambassador, "but as soon as I take my instrument in hand, he shrinks away, like a child, from the operation."—*The Dental Surgeon.*

PRIZE PAPERS.

With the desire of stimulating investigation in any field of activity directly relating to Dental or Oral Science, the New York Institute of Stomatology offers two prizes for the best papers submitted to it embodying the results of such original research.

The first prize for the best paper will be a gold medal and \$250. The second prize for the next best paper will be a gold medal and \$100.

CONDITIONS.

- a. The papers offered for competition must be typewritten in English.
- b. Must contain not less than 1500 nor more than 3500 words.
- c. Must be signed by a motto or *nom de plume*.
- d. Must be accompanied by a sealed envelope marked with the same motto or nom de plume on the outside, containing the true name as well as the motto of the contestant within.
- e. Must be sent to the chairman of the Executive Committee, Dr. F. Milton Smith, 38 West 36th St., on or before March 1, 1906.

JUDGES.

The following gentlemen have consented to act as judges:

Dr. C. N. Johnson of Chicago, editor of "Dental Review."

Dr. Eugene H. Smith, of Boston, dean of Harvard University Dental School.

Dr. Wilbur F. Litch, of Philadelphia, editor of "Dental Brief."

Under the following

RULES.

1. The papers will be sent to the judges without the sealed envelopes, containing the names of the contestants, which will be retained by the Executive Committee till the decision of the judges is made.

2. In deciding the merits of papers offered in competition the judges will be requested to take into consideration the value and character of the research work, the results of which are presented, more than the literary character of the essays, but to give the latter due credit.

3. The judges are expressly authorized to decide which if any of the papers submitted to them are of sufficient merit to entitle them to the prizes offered, or to withhold the award from all the papers if none are deemed worthy.

4. Authors of the prize papers will be invited to read their essays

before a meeting of the Institute, as will the writers of other papers of especial merit, the Institute reserving the right to the first publication of all papers offered in competition.

Papers not used will be promptly returned to the writers. Those read before the Institute will be as fully discussed as possible and when published will be adequately illustrated.

For further information address Dr. F. Milton Smith, 38 West 36th St., New York, N. Y.





ABSTRACTS and SELECTIONS

SOMNOFORM VS. NITROUS OXIDE.

**By W. Orr Gray, L. D. S. Ed., D. D. S., Univ. Pa. Demonstrator of
Operative Dentistry and House Surgeon, Melbourne
Dental Hospital.**

The discovery of nitrous oxide as a general anaesthetic specially adapted to operations occupying a short period of time, was greeted by dentists with more or less suspicion at first, in many cases amounting to absolute antagonism.

• However, as the daring pioneers carried out their experiments with the utmost carefulness and perseverance, success crowned their efforts. Incredibility on the part of the dental profession gradually gave way to wonderment, and that in turn to a desire on the part of each member of the profession to try the new anaesthetic for himself—till at the present day, from the humblest to the most ambitious dental practitioner, nitrous oxide is looked upon as the safest and best general anaesthetic to be given for all operations of short duration.

Fatalities have marked the course of nitrous oxide, but to a very much less degree than in the administration of chloroform or ether, and, in the hands of capable experienced dentists it rightly deserves its name as the safest anaesthetic known, that is, up to the last year or two.

The chief advantages claimed for nitrous oxide are the safety of its administration and its freedom from unpleasant after-effects; but its great disadvantages are the cumbersome and expensive apparatus necessary for its administration, the short period of anaesthesia produced, the total absence of analgesia when anaesthesia is passing off, occurrence of jactitation rendering it almost impossible in many cases to accurately place an instrument on a tooth, and last, but not least, the unpleasant appearance of the patient's features to onlook-

ers and the irregular character of the respiration. Within the last year or two Somnoform has been advocated as a general anaesthetic to be used in preference to nitrous oxide.

For its history and method of use full instructions accompany each bottle of the anaesthetic, these being all that are necessary to the most inexperienced. Somnoform is now passing through a period of doubt, suspicion, and expectancy, not unlike that of nitrous oxide when first used in dentistry.

There are many amongst us who condemn the use of Somnoform at once, never having used it themselves, or even seen it used, whilst there are others who are so conservative that, once having used nitrous oxide, they cannot discard it, even though they believe Somnoform to be better adapted to dental operations requiring an anaesthetic. A few of the more ambitious dentists began to give Somnoform instead of nitrous oxide but, hearing of a fatality with chloride or ethyl or with narcotile or with kelene, they at once sheered off again, and condemned Somnoform as being too dangerous to use.

If fatalities under general anaesthetics were to prohibit their further use, what anaesthetic have we that could be used as such? Not one. Somnoform has been used exclusively in over one hundred and fifty cases at the Melbourne Dental Hospital within the last few weeks, and has given the greatest satisfaction to all concerned, fulfilling all that its most ardent supporters claim for it.

The patients have been taken at random, that is to say, no special precautions have been taken other than those taken for the administration of nitrous oxide, and in only two cases has vomiting occurred as an after-effect, and I am practically certain the vomiting was due solely to swallowing of blood in both cases, and not to the action of the anaesthetic itself. Some patients complain of "feeling funny," and a few experience a sensation of nausea, lasting only a minute or two, but the majority leave for their homes within a few minutes after the operation, and not one has ever complained of any further ill effect.

After careful study of other apparatus, I use preferably the "Perfect" mask and inhaler, designed by Field Robinson, D.D.S. Univ. Pa., as, for simplicity and utility and ease of sterilization, in my opinion it is superior to any I have yet seen. With this inhaler I found that, owing to the nature of Somnoform, a great percentage of the agent was lost by volatilisation whilst anaesthetising the

patients; however, by placing a piece of lint in the cylinder of the inhaler between the linen diaphragm and the bag, I found no appreciable amount of Somnoform was wasted.

After careful study, as well as the close questioning of patients, I find that the best method of administering Somnoform is to break a tube into the inhaler and close the valve at once. Apply the face-piece immediately, but not perfectly close on the face for the first four or five seconds, so as to allow the patient's senses to become gradually dimmed, and so prevent any feeling of suffocation—a sensation always experienced by patients when, prior to nitrous oxide or other anaesthesia, a face-piece is applied tightly to the face, the mouth and nostrils becoming filled with the vapour of the anaesthetic whilst the patient is perfectly conscious.

After four or five inhalations, I press the face-piece close to the face, and exclude all air, the exclusion of air from this stage until the anaesthesia is complete being absolutely essential or after-sickness is prone to occur.

By following this procedure it will be found it takes from twenty to fifty seconds to produce anaesthesia, and this I have found will last from one to five minutes.

Following the period of anaesthesia is a distinct period of analgesia, lasting from one to five minutes, during which period, if desired, the operation can be continued without the least pain and danger of shock to the patient, a factor unknown in nitrous oxide anaesthesia. The average number of teeth extracted in each case at the Melbourne Dental Hospital, has been five or six, and in many cases ten or twelve, and in some cases twenty or more. The anaesthetic has been re-applied twice or three times as required, as the anaesthesia was passing off. Personally I have never yet been required to keep a patient under the influence of Somnoform longer than five minutes, but cases are recorded where the anaesthesia has been prolonged for over twenty minutes, with no unpleasant symptoms or after-effects. The average quantity of Somnoform used has been one tube of 3 c.c., but tubes of 5 c.c., can be obtained, or a second tube of 3 c.c. used if desired. The most reliable sign of anaesthesia is relaxation of the muscles, gauged by me preferably by those of the arms, but the loss of the conjunctival reflex, though not reliable in every case, is fairly constant, and as such is an adjunct. There is no loss of natural colour, but, if anything, a slight flushing of the face, and no struggling, except in cases of alcoholics or inveterate tobacco smokers.

The respiration remains beautifully regular throughout, and the pulse is strong and regular, but slightly faster than normal.

No patient has expressed a distaste to taking Somnoform a second time when necessary for successive operations, and one of our own students, who previously had nitrous oxide administered for tooth extraction one day, and Somnoform on two successive days, much preferred the Somnoform, and so, needless to say, did the operator, as the teeth were extremely difficult of extraction.

After the most careful and critical use of Somnoform, my personal opinion is that it has come to stay, and is far superior to nitrous oxide for many reasons.

It is easily handled and as easily administered; has no ulterior effect on the heart or on the respiration; the period of induction is short, and the ensuing period of anaesthesia materially lengthened; there is total absence of any unpleasant symptoms to worry the anaesthetist or onlooker; the apparatus is not in the least cumbersome, and its cost is fairly reasonable.

I have no hesitation in saying that I would never now administer nitrous oxide myself in preference to Somnoform in private practice, as I firmly believe we take more risk with the former and do less justice to our patients.

All anaesthetics incur some risk in administration, but in my opinion Somnoform less so than any, and as such is worthy of consideration by every dentist, and should ensure a fair trial at least.

Splendid articles on the subject of Somnoform appeared in the December and February number of the "Dental Cosmos," and in the October number of the "Journal of the British Dental Association," and for special information as to the action of Somnoform on the vascular and nervous systems, I would refer all interested in the subject to these journals.

The following are the particulars of five cases:

First Case.—Young woman of about 25—Naturally hysterical. No preparation made in the way of loosening any portion of the clothing. Pulse was felt once or twice. The inhaler was not pushed close to the face until after three or four inhalations. A tube of 3 centimetres was used. Time from first inhalation to anaesthesia 50 sec.; time spent in operating, extracting three teeth, 35 sec.; whole time until recovering consciousness, 1 min. 55 sec. A capital analgesic period. The patient felt very funny, she said; rested for some time. Hysteria.

Second Case.—Young woman about 18—Plump and of good colour; sat down as she was, no preparation as above. Breathing for several seconds very sluggish. Time, inceptive stage to anaesthesia, 1 min, 13 sec.; total time until recovering consciousness, 2 min. 20 sec. Three teeth extracted in this instance. Recovery very rapid. In six minutes patient walked away, apparently none the worse for the administration.

Third Case.—Patient (male), 42—Anaemic and alcoholic, and told us he was not allowed chloroform, as he had a bad heart. Somnoform given, 5 c.c.; induction period, 60 sec.; recovery took four minutes. Anaesthesia excellent, lasting fully 1 min. 30 sec. Eleven teeth extracted. Patient struggled violently. Left the hospital in five minutes from the time he was completely conscious and had no further ill-effect.

Fourth Case.—Patient (male), 35—Alcoholic. Somnoform given, 5 c.c. Patient took it well, and anaesthesia was produced in 40 sec., and lasted 1 min. 3 sec. Patient had five teeth extracted, and then began to shout and struggle so violently that he was with difficulty held down for five minutes, when he regained his senses, and had no further ill-effect. No pain was felt, and patient had no knowledge of struggling.

Fifth Case.—Female 20—No history of heart disease or other organic trouble. Patient took Somnoform splendidly. Induction period was 50 sec.; anaesthesia, 2 min 30 sec., during which time twenty back teeth were extracted, the upper and lower incisors and canines only being left. Patient recovered splendidly; no complaint of any nausea or other after-effect, and left the hospital as soon as the bleeding permitted.—*The Australian Journal of Dentistry.*



SOCIETY PROCEEDINGS

*THE GOLD INLAY.

By Dr. J. B. Pherrin, Central City, Iowa.

Mr. President and Members of the Iowa State Dental Association:

I can assure the members of this Association that I consider it indeed a great honor to appear before you, knowing full well the spirit of progress and the high standard of skill that permeates the individual members of this organization.

In presenting this subject to you I sincerely hope, that my deductions based upon a personal experience of six years in this work will be recorded truthfully, and any enthusiasm I may possess will be relegated to the realm of facts.

In estimating the value of any operation or procedure in dentistry several prominent factors present themselves. We may differ as to the value of these factors, but the truth will assert itself and scientific mechanical laws applied to all dental operations will be the future basis of our procedure.

The first and most important factor is a proper diagnosis of each case as presented as regards the character of operation necessary. I firmly believe that it is only after years of experience that this factor is fully developed in the average dentist, and even then an error or misjudgment is liable to occur.

It is unnecessary for me to take up your time in a detailed review of all of the factors that constitute a successful dental operation. Briefly we might mention: Durability or Permanence, Comfort to the Patient, Cleanliness, Extension of Cavity Margins, A Correct Restoration of the Dental Organs of Mastication, and a Saving of Vital Energy to Both Patient and Operator, where in our judgment and experience an operation can be performed that will fulfill all of the other enumerated requirements.

I have made the statement, that I should relegate any enthusiasm that I possessed upon this subject to the realm of facts, but I am going to add, that any dentist who has no enthusiasm for his chosen profession or upon any special work or methods that he is successfully following connected with the same, is violating our code of ethics, if he does not exhibit some animation and willingly impart any and all knowledge that he may possess upon any process.

* Read before the Iowa State Dental Society, Des Moines, May 2, 3 and 4, '05.

In this paper I propose to take up the subject of "Cavity Preparation for the Gold Inlay," where applicable and the Modus Operandi. Gentlemen, I think that the time is past for any man to come before an intelligent body of dentists and deliberately make the statement that the inlay will adhere to the cavity walls no matter what preparation is given the cavity. I make this statement for the simple reason, that many of the clinics it has been my good or ill fortune to see, the cavities have been saucer-shaped and the only redeeming feature of these operations, have been the minute and detailed attention paid to the cavity margins, a matter of secondary importance, especially with porcelain, as with this substance we can follow a slight deviation of the cavity margins without marring the artistic effects of our filling.

Do not misunderstand me, that I would discourage the greatest care as to minute and detail of every cut connected with the marginal cavity preparation for this work, but I simply make this assertion: that detail of marginal perfection is done at the expense of mechanical stability for the retention of the inlay in many cases.

Two infallible rules should be strictly adhered to in the preparation of cavities for this work. Either a resistance or a retention form or both should be given all cavities where the inlay is indicated. There is also another important factor that has been overlooked in the inlay proposition, that is, the area of cement or adhesive surface. This latter I consider of great importance especially if this resistance surface is in a direct line of the force exerted upon the same. The same laws that our great benefactor and investigator (Dr. Black) has so forcibly, skillfully and plainly laid down for our guidance in operative dentistry relative to the flat seat at the gingival is also most important in the cavity preparation for the inlay.

I have referred briefly to some of the cardinal principles to be applied to this work both for gold and porcelain, and as I am supposed to confine myself to the gold inlay I shall describe some of the most important features of this work.

First. Where to use the gold inlay. Second. Cavity preparation and third, method of manipulation. First. Use the gold inlay in all broken down or badly decayed teeth where the application of the rubber dam would stamp you a brute and where the patient demands gold of you. In all devitalized molars or bicuspids and in most cases devitalized superior cuspids—distal cavities, and in all molars and bicuspids where there is a disposition to pyorrhea.

In cases where the teeth are worn to such an extent that it becomes necessary to raise the bite, the inlay is invaluable and serves the purpose much better than the old methods, not only for the bicuspids and molars, but for the anterior teeth as well. In the care of children's teeth and the teeth of aged people, the knowledge of the inlay is indispensable.

If sufficient care is observed as to detail the inlay can be used to advantage in small bridge cases, also for retention purposes in loose teeth. In fact, use the inlay in all cases, where you feel that the environments presented are such that in your judgment it serves the purpose better with the same relative degree of skill exerted than would the old methods.

I fully realize that to describe systematically the cavity preparation for the gold inlay is a difficult task, for the reason that this method is mainly used in the most desperate cases. However, I shall try and make a few prominent points plain that must be followed to be successful in this work. For convenience, I shall classify the cavities for this work into labial and buccal, crown, proximal with step, and proximal involving the entire occlusia; and mesial occlusal distal cavities. The simplest form are the labial and buccal cavities.

These cavities should be cut under all circumstances with as near perpendicular walls as is possible to make, using only the straight fissure burs to attain this end. In the case of molar buccal cavities, it will be necessary to resort to the use of the right angle hand piece to cut lines correctly.

Crown cavities in operative dentistry are generally considered the simplest form of cavity, yet I have been amazed to find how much decay we have overlooked in this class of cavities owing to the burrowing of the diseased tooth structure underneath the overhanging enamel margins since resorting to this method of saving the teeth. If simple fissure cavities exist, I would by all means recommend the use of the old methods for the saving of such teeth, but if upon chiseling we find this excessive burrowing of the decay, would by all means resort to the free use of the gem stone carrying the cavity margins well to the bucco lingual mesio distal borders and bevelling well the margins, thus insuring the protection of all thin walls. You are all too familiar with the ordinary step cavity preparation in operative dentistry for me to dwell at length upon this form of preparation, any more than to say, that in distal cavities for the inlay all lines in step and proximal cavity must be kept parallel and that there must be a considerable triangular divergence of lines of step toward the lingo

and bucco mesial from the main proximal cavity, also a deepening of step cavity toward the mesial.

In proximal cases of excessive decay in bicuspids and molars, always preserve the buccal and lingual cusps and walls, bevelling well these walls and covering the entire occlusal surface of tooth with the inlay. In M. O. D. cavities the safest plan is to always cover the entire occlusal surface of the tooth.

If the inlay is used for an abutment for bridge, remember that it is absolutely necessary to cover the entire occlusal portion of tooth. Also would recommend the insertion of grooves or pins at convenient places in tooth structure for retention purposes. As a means of retention for small bridge upon the lower incisor, or for the retention of these teeth when loose, the inlay has proven most successful and admirably adapted for these cases. This attachment can be made by cutting with fissure bur and right angle hand piece, directly across the cutting edge of tooth and extending down from this groove about the center of tooth lingually another groove making a T shaped excavation, thus insuring a mechanical principle that for strength and cleanliness is much superior to the old band methods.

It is not amiss to say, that as a person becomes skilled in this work, that it will be no uncommon occurrence for cases to present themselves that will call forth personal ingenuity and inventiveness of the operator and that to attempt to describe the manifold uses of this principle in dentistry would be next to impossible.

It is with some degree of caution that I approach a description of the technique of the inlay as I feel that this is largely a matter of personal equation and that equally skillful men may follow different methods and arrive at the same result.

In burnishing matrix I usually press the gold into place (using about a No. 40 rolled pure gold) with a piece of spunk using a large burnisher or amalgam instrument for this purpose. After matrix is properly formed to give the marginal lines of the cavity, remove and trim, leaving from 1-32 to 1-64 of an inch lap over cavity margins. Relpace in cavity (and if a step proximal cavity) finish burnishing either the step or proximal part of cavity, remove and strengthen well this part of inlay with solder. Replace in cavity and firmly wedge or hold the strengthened part of matrix in cavity and finish the burnishing of the remainder of matrix.

A wise precaution is to never attempt to remove matrix from cavity by teasing from overhanging matrix margins, but rather to

use fine explorer down in cavity and manipulating gently from this part of matrix for removal, thus keeping margins intact. It is immaterial should you press explorer through the matrix. It is always best to keep handy any of the mat surface golds, so as to quickly repair any tear in matrix, in fact it is absolutely necessary to use this gold in the delicate grooves for attachments and all deep seated places.

After removing matrix coat the outside either with hrouge or whiting dissolved in alcohol and build up the inlay with the mouth blow pipe, being careful not to melt the entire mass of solder at once, as from my experience I am convinced that this is the cause of shrinkage in large inlays.

In a former paper read before the Minnesota State Dental Society I recommended the investment of the matrix for soldering. I have long since discarded this method for the reason, that with this method one is compelled to melt the entire mass at once, and I invariably not only had shrinkage but porosity in my inlay.

In concluding this short paper of my personal experience with the gold inlay, I wish to emphasize the fact, that this method for the saving of teeth is not only practical, but that it fills a long-felt want in our practice, and that the unhygienic conditions caused by unsightly gold crowns can be avoided in many cases.

It would be inappropriate and totally out of place for me to offer you this method as my own or as constituting all that there is in the practice of Dentistry, however, the conditions exist in our practice for this work and it has come into our profession, not as a usurper of old and tried methods, but as a necessity for special cases.

Again I thank you for the honor you have done me and for the many courtesies extended, and shall leave you with the feeling that we are friends.

In the introduction of this subject for your consideration, no doubt many expect it to be treated with all the vindicativeness of which the author is capable. This is not his aim, neither shall he endeavor to conciliate any. Conciliation and consolation come to the man who has done his work honestly and conscientiously. It shall be his effort by this production to lessen the breach between the conservative and radical factions, respectively so-called, in a plea for conscientious work by the profession.

Allow this preface of but a single sentence. Every gold filling as well as every dental operation should be an exemplification of the Golden Rule.

Until conditions of the oral cavity are changed for the better or a material is found that is capable of concentrating the influences there present which cause dental caries the present system of cavity formation must be rigidly adhered to. I speak of "the system" for all methods may not lay claim to the term, system. Indeed, the term would be untenable applied to such on account of the heterogeneous evidence they present.

A foe so persistent and merciless as dental caries must be met and combatted by the methods proven and now known to be most effective even at the hazard of being called radical. It delights the hearts of many men today to be called radical for they appreciate the fact that in this particular instance the term signifies stability and permanence of the operation and at the same time the conferring of a comfort and blessing to their distressed fellow creatures. It is to be noted that many men who were unsparing in their denunciation of "extension for prevention" and the so-called radical system of cavity preparation are assiduously seeking to prove that this has been their manner and method from time immemorial.

Indeed their generosity exceeds itself for they urge that the system is a classification of the methods so anciently used by them under different terms. Truly indeed is the chasm less wide. No other comment than this is necessary. "By their works ye shall know them."

Good intentions have no market value unless executed. The man who temporizes in his office for the major portion of the year and then attempts to make a creditable operation intended for the instruction of others is a dangerous character. "Can the blind lead the blind?"

To those who are honestly endeavoring to acquire knowledge along this line let me say, Beware of temporizing. When an attempt is made to convince you that an operation is made as well this way or that, carefully differentiate, then apply the injunction, "Do unto others as ye would that they should do unto you." Temporizing has no place where the permanent comfort of the patient is to be considered.

No man can practice dentistry and not recognize the benefits in the points of advantage claimed under this system.

Antagonism, ignorantly or prompted through jealousy, has strenuously sought to divert the unwary by misrepresentation.

The man seeking to raise the standard by higher ideals is a safer guide than the one who says, "this method is good enough, much easier and just as much money in it." This expression was made

within the last fortnight by a man who wrongfully receives a portion of the patronage of a confiding public. At the same time he paid the system the highest compliment yet received by giving utterance to the assertion, "You are too particular." No apology is necessary for this re-presentation of facts concerning methods, the practice of which has brought pleasure and satisfaction to so many operators of this state, a greater number than which no other state contains.

As before stated, every gold filling should be an exemplification of the Golden Rule. In order that this may be so, certain principles must be closely followed no matter what the conditions. Conditions may vary, principles never do. A perfect blending of these principles must be diligently sought for. Conditions control the blending in whatever way they vary from the ideal. It is because of this fact that a close differential study of conditions in each case is imperative.

It is not necessary that definite conditions be stated in the proposition before us save that caries has caused a cavity which involves a proximal surface with an incisal or occlusal surface. This form is chosen because a cavity so situated involves the greater number of principles. Generally speaking, the floor or base of the cavity should be at right angles to the line of stress or force and all axial walls perpendicular to the base. The occlusal seat or anchorage should be at least one-third the entire depth of the filling and two-thirds of that measure in breadth in molars and bicuspids, varying constantly in the different temperaments and the force which they are expected to withstand, as well as in all forms of malocclusions.

Incisal anchorage should be obtained by the cutting away of the lingual plate of the tooth and forming a base or seat at right angles to the axial wall and extending mesio-distally in proportion to the resistance required, which is relatively speaking, about the same measure as that of the gingival seat labio-lingually. The labial plates should be beveled toward the gingival sufficient to allow a firm body of gold to be condensed over and upon it. This protects the enamel at this point and affords additional retention to the filling.

In the preparation of a cavity a certain order of procedure seems to facilitate the operation. After the dental dam is adjusted and the teeth carefully cleansed the following order is found to be the most expeditious and satisfactory:

- 1st. Obtain the required outline form.
- 2nd. Obtain the required resistance form.
- 3rd. Obtain the required retention form.

- 4th. Obtain the required convenience form.
- 5th. Recover any remaining decayed dentin.
- 6th. Correct the form of the cavity, smooth the enamel wall, bevel the cavo-surface angle and complete the detail of the cavity formation.

At this point it seems necessary to caution against the use of discs or strips in the smoothing of enamel, chisels and planes are alone permitted.

The outline depends upon the aesthetic requirement and the environment of the cavity margins.

The resistance form upon the occlusal force of the teeth upon the finished filling.

The retention form upon the line of force plus the form of gold used, annealed or unannealed.

The convenience form upon the accessibility of the cavity necessary to the proper instrumentation of the cavity and condensation of the gold, whichever form is used.

As the contour of the tooth cannot be restored by the use of unannealed foil the amount is regulated by the retention form necessary to receive the remaining portion or the annealed foil.

The advantages derived from the use of the unannealed foil are its ready adaptability to cavity margins and walls and the time saved in the insertion of that portion of the filling and the finishing of the same.

The condensation of the gold is now the next important feature of the operation. Having followed closely the order of procedure and having obtained the best form of cavity consistent with strength and aesthetic effect, our structure is valueless unless the gold securely and hermetically seals the cavity at the margins thereof and is itself a homogeneous mass of the highest specific gravity obtainable. Instruments for condensing the gold must reach every point upon the surface of each laminae of gold at an angle which permits the use of the sufficient force to secure the proper specific gravity allowing for the thickness of the lamina and the breadth of the plugger point. The angle is usually one of 45 degrees to the wall approached. The stepping of the plugger point upon the lamina must be from the center of the filling toward the wall approached, and at the angle named, by successive lines of steps until the gold in that lamina is condensed upon the cavo-surface angle of the cavity.

The changing of the plugger point is permissible only in extreme cases, though at no time is it commendable. Such change cannot be made without forming a new line of serrations into which it is impossible to condense the fresh lamina of gold, thereby forming within the filling an interior line of weakness which may result disastrously. The force necessary to obtain the highest specific gravity attainable in a gold filling made by the hand mallet, is about 15 lbs. to the square inch, delivered upon a plugger point having a condensing surface of 1 m/m in breadth.

The number of such blows is estimated according to the size and weight of the pellet of gold contained in the lamina.

Twenty, forty, eighty and one hundred and sixty such blows respectively to each of the following sized pellets of gold made from one sheet of R. S. Williams foil, No 4, 64, 32, 16 and 8.

The specific gravity thus obtained is about 19. The specific gravity obtained by the ordinary automatic mallet is about ten to fourteen.

The contouring of the surface of the filling is of more importance if possible than any other step in the operation. After proper separation is obtained a positive and permanent point of contact upon the approximating tooth is unnecessary to maintain the required interproximal space and the comfort dependent thereon.

The finishing of the filling to form is accomplished properly only by knives and files adapted to that purpose, never by strips or discs. Their use is permissible only in giving the final polish and then should never be allowed to pass over the point of contact.

It is impossible to lay greater stress of importance upon any particular step of the procedure. Care and dilligence in each is imperative. As the strength of a cable chain is its weakest link, so the value of a gold filling is rated by that of its most vulnerable part.

Judgment in the relative strength of the filling to the tooth structure and of both to the force to be resisted is to be commended.

Thereby is the structure made not only a thing of beauty and a joy forever, but in utility one of worth and satisfaction to the patient and which shall cause him to rise up and call his dentist blessed.

ANATOMICAL OCCLUSION OF ARTIFICIAL TEETH.

* BY DR. W. D. JAMES, TRACY, MINN.

Mr. President and Members of the Iowa Dental Society—It gives me great pleasure to be here today and to meet with the members of this society. As I look about me I find that you are nearly all strangers to me, yet not strangers, for I trust there is that indissoluble tie which binds us together and unites us into a band of friends and brothers among whom no contention exists “except that noble contention who best can work and best agree.”

It has been my good pleasure from time to time to meet many dentists from Iowa and I am pleased to say that they have always impressed me as being right up in line with the rapid advancement of dentistry in this great Northwest.

Dentistry of today is not the dentistry of our fathers. By the word fathers I mean those noble men of our profession who have laid the foundation upon which we today are building. “All reverence to their immortal names.” In all the liberal arts and sciences there are great masters. Music has its Beethoven, Wagner, Liszt and others; sculpture its Canova, Michael Angelo; art its Corregio, Raphael, Landseer; literature its Shakespeare and Dante; law has its Blackstone, Kent, Cooley; medicine its Pasteur, Sayer, Koch, Gray and others; dentistry has its Harris, Wells, Allen, Miller, Webb; but greater than all these we have the immortal Black and Bonwill, and last but not least, our own mighty man of the Northwest, Dr. E. K. Wedelstaedt. These men are all masters, and all who are striving to follow in their footsteps are but apprentices.

Today, gentlemen, I invite your attention to but the lamented Dr. W. G. A. Bonwill, who did more for prosthetic dentistry than any other man. It was he who first gave us the idea of anatomical occlusion of artificial teeth and perfected an instrument with which we are able to duplicate all the movements of the human jaw. In 1895 Dr. Bonwill made a journey to St. Paul to demonstrate before our Minnesota State Dental Association. It was there that I received my first impression of what anatomical occlusion of artificial teeth meant. I at once became very much interested and at the close of the session several of us were invited to spend the evening at his rooms where he showed us many different skulls and so thoroughly demonstrated the correctness of his theories and teachings that I have never since made but two sets of teeth on any other principle.

* Read before the Iowa State Dental Society, Des Moines, May 2, 3 and 4, '05.

In coming to you at this time I wish to say that I came not as a teacher or as one having authority, but rather as an humble disciple of my master, and if what I can say or do while with you is the means of helping any of you I shall feel that my time has not been lost.

In consideration of the subject proper, "Anatomical Occlusion of Artificial Teeth," I wish to make a statement in order that I may not be misunderstood. As I said in the beginning of this paper, Dr. Bonwill has done more for prosthetic dentistry than any other man, and I believe most thoroughly in his principles and theories, but I do not exactly agree with him in all details of the work. The points wherein we differ I will not take up in this paper, but will try to demonstrate them in my clinics in order that I may make them more clear.

Assuming that all steps up to occlusion have been taken, we will proceed with that. Before we can comprehend what constitutes true occlusion we must know the anatomy of the human jaw and its functions. I am fully convinced that the only way to learn anything about correct occlusion of teeth is to make models of different mouths and study closely their general characteristics, also the abnormal conditions which present themselves. It is my practice before making operations of any kind to thoroughly examine the occlusion in all the various movements of the jaw. In doing this I have received many valuable lessons.

To Dr. Bonwill we are indebted for an articulator which more nearly approximates the human jaw in all its movements than any other that has ever been produced. This fact I have proven to my own satisfaction, and you can do the same if you will search for the truth. It needs no argument on my part to convince you that an artificial set of teeth should correspond with the natural ones in every respect. Then let us take nature for our guide and see how near we can duplicate her works. A study of the anatomy proves one thing, and that is, it is just the same distance from the center of one condyle to the center of the other as it is from the condyles to the point where two central incisors meet at the cutting edge, which forms a triangle of four inches, seldom varying more than a fourth of an inch. Now if we observe these points we will notice that law and order is the rule and that the jaw, in forming this triangle, brings into contact the greatest amount of grinding surface of the bicuspids and molars, and at the same time allows the incisors all to come into action during the lateral movements of the jaw. You will also notice, in observing

this rule, that from the cuspids the bicuspids and molars run in nearly a straight line instead of a curved one, back toward the condyloid process.

In the normal jaw there should be an overbite and also a corresponding underbite, without which the incisors would lose largely their functions, that of incising food. Where the incisors strike directly upon each other the power to cut off food is very much lessened.

Where there is an over-bite and under-bite, just in proportion to their depth, will be the length of the cusps in the bicuspids and molars. The curvature at the ramus must be made to conform to the depth of the over-bite so that when the lower jaw is thrown to the right or left the buccal and lingual cusps of both lower and upper sets on that side come together at the same time. The curvature should be great enough to allow the lower second molar on the opposite side to move forward to meet the first molar in the upper; this also balances the plates during mastication and equalizes the action of the muscles on both sides of the mouth at the same time. It may be a question with some whether by this method of grinding and assembling the teeth we can imitate the natural movements and expressions. I want to ask one question: Has there ever before been any definite rule or plan whereby we could regulate our beginning and ending in making a set of teeth? If there has been I have never heard of it. It has been my observation that artificial teeth, I care not from whose hands they come, are seldom made after any definite rule. I will admit there are many sets of teeth that do fairly good service, and there are many that look well, and the occlusion is good as far as the up and down movements are concerned, but when it comes to the lateral movements of the jaw, they fail utterly. The regular horseshoe shape which we see so often will not admit of the lateral movements and at the same time bring the bicuspids and molars into a position where they will bear an equal amount of stress, and consequently is the cause of teeth breaking off and the double somersault excursions which teeth sometimes take.

I remember right well a splendid rule which our professor of prosthetics gave us while at college. Now I hope every man here will remember it. The rule was this: If you ever expect to be successful in making artificial teeth and at the same time make your patients happy, you must thoroughly impress upon their minds that they must chew on both sides at the same time. That rule was all right, but my patients were so contrary they would not obey my instructions. Gen-

tlemen, that was one rule which caused me to look for something more in keeping with nature's laws.

It may not be out of place at this time to give you a few simple rules which, if followed, will be of service to you in following out this line of work. It is not necessary for me to say that perfect models and a perfect bite is necessary. After obtaining a perfect bite, mark the median line on both upper and lower models, then with the dividers mark the length of the bite; this will prevent any possibility of shortening or lengthening the bite in the arrangement of the teeth. In mounting the models in the articulator always place the lower so that the median line is about four inches from the condyles of the articulator and the wax or tooth line will stand about one and one-half inches from the floor of the articulator, then place the upper model in position and you are ready for the grinding and placing of the teeth. The first step is to grind the bicuspids and molars so as to form an ogee surface. The great advantage in this method is, we have presented at the occlusal line a broad surface contact, instead of point contacts, as in the original teeth as we get them from the manufacturers.

In grinding up a full upper and lower, the process is practically the same only the surfaces are reversed. In the upper the buccal cusp should be at a sharp angle, while the lingual cusp should be somewhat rounded. The lower is just the opposite—lingual sharp and buccal rounded.

In setting up a full upper and lower the six anterior teeth should be placed first, always taking into consideration the general characteristics of the features of the patient. The eye will soon tell one how much of an over-bite will be necessary to restore the natural expression. After this has been done, then commence with the bicuspids and molars on each side, first observing the necessary curvature at the ramus which must always be as great as the over-bite.

The lingual cusps of the upper should always strike between the lingual and buccal cusps of the lower when in repose, but when the lower is thrown to the right or left the teeth upon that side should strike upon their cusps, while upon the opposite side the lingual cusp of the upper should strike upon the buccal of the lower. This will as I have previously stated equalize the action of the muscles on both sides of the jaw at the same time.

Gentlemen, in this brief paper I have tried to show you that certain results can be obtained by following certain laws, based upon the anatomy of the human jaw.

SOCIETY ANNOUNCEMENTS

AND REPORTS OF MEETINGS

FOX RIVER VALLEY DENTAL ASSOCIATION.

The Fox River Valley Dental Association will meet in Fond du Lac Sept. 12 and 13.

MICHIGAN STATE DENTAL ASSOCIATION. . .

The forty-ninth annual meeting of the Michigan State Dental Society was held at Detroit, July 10, 11, 12. The following officers were elected for the ensuing year:

Dr. J. J. Green, Ionia, President; Dr. Alfred LeGro, Three Rivers, Vice-President; Dr. E. B. Spalding, Detroit, Secretary; Dr. C. H. Worboys, Albion, Trustee.

NEW DENTAL SOCIETY.

A meeting of the dentists of Northeast Nebraska in Emerson Aug. 4 resulted in the organization of the Northeast Nebraska Dental Society. The following officers were elected: Dr. C. E. Brown of Emerson, President; Dr. F. B. Heckert of Wayne, Vice-President; Dr. C. S. Parker of Norfolk, Corresponding Secretary; Dr. E. M. Hogan of Bancroft, Recording Secretary. The next meeting will be held in Norfolk in October.

VIRGINIA STATE DENTAL ASSOCIATION.

The annual meeting of the Virginia State Dental Association was held at Linchburg Aug. 2, 3, 4, and elected the following officers for the ensuing year:

J. Lewis Walker, Norfolk, President; Edward Eggleston, Richmond; F. A. Lee, Richmond; E. J. Applegate, Newport News, and W. H. Ewald, Portsmouth, Vice-Presidents; George F. Keesee, Richmond, Secretary; J. Hall Moore, Richmond, Corresponding Secretary, and A. L. Stratford, Richmond; W. H. Mosely, South Boston, and William Pilcher, Petersburg, Executive Committee.

The following members were suggested to the Governor as members of the State Board of Dental Examiners, two of whom will be appointed to the board by the Governor: H. Wood Campbell, Suffolk; J. P. Stiff, Fredericksburg; W. E. Norris, Charlottesville, and Irvin B. Smith, Richmond.

FIRST ANNUAL CLINIC OF THE FRATERNAL DENTAL SOCIETY OF ST. LOUIS, NOVEMBER 20TH, 21ST, 1905, AT THE BARNE'S DENTAL COLLEGE.

Special features of the meetings will be a series of lectures on "Cavity Preparation," "Methods and Principles of Packing Gold," and "Methods and Principles of Finishing Fillings," by Dr. E. K. Wedelstaedt of St. Paul; Drs. A. C. Searl, Owatoma, Minn.; J. F. Wallace, Canton, Mo., and numerous other members of the Black

and Wedelstaedt Clubs and other prominent men in Operative and Prosthetic Dentistry will give clinics. Complete program will be announced later.

All ethical practitioners are invited to be present and clinic. Please send your name and subject of clinic to the Secretary. Exhibit space to be obtained by application to the Secretary.

A cordial invitation is extended to the profession to be present and make this meeting limited in scope, but limitless in importance, the best ever held in this section.

BURTON LEE THORPE, Pres.

S. H. VOYLES, Sec., 3201 Washington Ave.

THE NATIONAL DENTAL ASSOCIATION.

The National Dental Association held its annual meeting at Buffalo, N. Y., July 24 to 27, and adjourned to meet at Atlanta, Ga., the first Tuesday in September. Probably the most important business transacted at the meeting was the laying of plans for the publication of a history of the progress of the art and science of dentistry.

There is not in existence a good treatise on the history of the profession. The question of expense has stood in the way for a long time, but the association appropriated \$3,700 for the purpose of carrying on the work, and reappointed a committee of the following men to take charge of the editing and publishing: Drs. Charles McManus of Harvard University, B. J. Cigrand of the University of Illinois, E. C. Kirk of the University of Pennsylvania and H. L. Fuller of Western Reserve University.

The committee has been in existence eight years, and during that time has been gathering material. The foreign portion was written by Dr. Guerini of Naples, Italy. It is expected that the book will be out before the next convention. A great deal of interest in the work has already been awakened among the members of the profession.

The following officers were elected:

President—M. F. Finley, Washington, D. C.

Vice-Presidents—South, Frank Holland, Atlanta; West, William Conrad, St. Louis; East, L. P. Bethel, Columbus, Ohio.

Recording Secretary—A. H. Peck, Chicago.

Corresponding Secretary—C. S. Butler, Buffalo.

Treasurer—V. E. Turner, Raleigh, N. C.

Executive Council—H. J. Burkhardt, Batavia; J. Y. Crawford, Nashville; Charles McManus, Connecticut; F. O. Hettrick, Kansas; F. O. Blair, Illinois.

Executive Committee—J. D. Patterson, Kansas; H. F. McFadden, Pennsylvania; J. P. Grievers, Maryland.



NECROLOGICAL

DR. J. B. MCCASKEY.

Dr. Joseph B. McCaskey of Lancaster, Pa., died at his home in that city. He was born in Leacock township in 1839, and had been engaged in his profession in his offices over the First National Bank since 1864. Three children survive. Prof. J. P. McCaskey, principal of the Boys' High School at Lancaster, is one of the surviving brothers.

DR. B. D. EARLE.

Dr. Baylis D. Earle, son of Dr. Thomas T. Earle, died July 10 after a week's illness of appendicitis. An operation was performed, but little relief was afforded, and he grew steadily worse.

Dr. Earl was one of the foremost young men of Greenville S. C. professionally and socially, and was a graduate of University of Maryland, class 1894.

DR. MARION WARNER.

Dr. Marion Warner was shot Aug. 5 at Louisiana, Mo., while on the train going to Kansas. The Doctor was a resident of Secor, Ill. He left there for a visit with friends in Missouri, and while sleeping was shot and instantly killed by a drunken passenger. He was born near Secor in 1863 and graduated from the Western Dental College, Kansas City, Mo., in 1897. He practiced in that city and also in Oklahoma before returning to his home in Secor. He was highly respected.

DR. LEWIS M. GRAY.

Dr. Lewis M. Gray, one of the oldest dentists in the city of Columbus, O., died suddenly July 19 at Mt. Carmel Hospital of heart failure. His death was due indirectly to the hot weather.

For a number of years he has been in very poor health, and was recently overcome by heat on account of his weakened condition, and was prostrated.

Dr. Gray was 61 years of age, and had been practicing dentistry for about thirty years. He practiced in Zanesville previous to his location in Columbus about fifteen years ago. He was married, and leaves two sons and a daughter.

Dr. Gray was of a rather peculiar temperament, and best known to the profession in Columbus for that reason. He was very positive in his likes and dislikes, and reserved, and those who knew him superficially were inclined to believe him somewhat "cranky;" but there are dozens of poor people in Columbus who knew him and could tell stories of his charity and of a great, kind heart hidden behind his apparent reserve.

MISCELLANEOUS

EASY METHOD OF REMOVING REGULATING BANDS.

To remove regulating bands or crowns, grasp the band with forceps and squeeze with firm pressure, repeating the process around the tooth if possible. This will loosen the cement and may even expand the band so that it can be easily removed.—*F. W. Stephan, Dental Review.*

HARDENING PLASTER MODELS.

Plaster models of orthodontia cases, etc., may be hardened and given a marble-like surface by boiling them in stearin. The models must be thoroughly dry before putting them into the boiling stearin. Use a double boiler, like a glue-pot, for melting the stearin.—*Dental Register.*

A LABORATORY HINT.

When working with wax in the laboratory, use a large common school slate for a bench cover; it will catch all pieces and drops of melted wax, and when removed leaves the bench clean and ready for the next work. Wax spots on a bench may be very annoying when gold work is being done.—*Dental Register.*

A NEW ANAESTHETIC.

Two German scientists announce in the Deutsche Medicinische Wochenschrift the discovery of a new anaesthetic having all the virtues of cocaine without the latter's secondary ill effects. The new substance is called "allypine." It deadens pain by local application and does not contain poison.

PULP-CAPPING MATERIAL.

Dry the cavity, then coat the exposure with a chloroform solution of gutta-percha, drying this by means of the chip-blower before placing the cement-filled shells in position. As a bar to thermal changes, and—what is perhaps quite as important—those sometimes charged against the chemical action of the phosphoric acid, it meets the requirements as perfectly as anything else within our reach.—*W. A. Bostwick, Dental Office and Laboratory.*

PRECAUTIONS WHEN TAKING PLASTER IMPRESSIONS.

When impressions are to be taken, note all conditions of the mouth carefully. If a thick, viscous saliva be present, it may be overcome by rinsing the mouth thoroughly with milk of magnesia.

The adhesion of the impression material to the teeth may be prevented by coating them slightly with vaselin, or by rinsing the mouth with milk of magnesia just before the operation.—*Dental Register.*

DARKENING THE SHADE OF "PHOSPHATE" FILLINGS.

By using a German silver spatula the shade of these fillings can be darkened to a great extent, and the color produced is permanent, no doubt due to the action of the fluid upon the metallic spatula. With a little practice a great variety of shades can be produced. The darkest shades are produced by prolonged use of the spatula.—*Walter Harrison, Brit. Dental Journal.*

COCAIN ANAESTHESIA.

Means says that Reclus, who reports 7,000 operations under cocaine anesthesia without a death, insists on the observance of the following rules: (1) Never use a stronger solution than 5 per cent. externally, or 1 per cent. hypodermically. (2) Always have the patient recline during the administration of the anesthetic and not get up for half an hour after. (3) Always have the patient eat and drink something before rising.—*Columbus Med. Journal.*

A SIMPLE PROTECTOR FOR THE HOT-AIR SYRINGE.

The metal portion or end of the syringe may be covered with a piece of white rubber tubing of the same diameter; the tubing to be about an inch shorter than the metal end. When in use, the tubing is to be drawn up on the metal toward the bulb, exposing the tip for heating; after which the tubing is pushed out so as to cover the point, thus confining the heat and, being a non-conductor, effectually preventing the burning of the lips or mucous tissue.—*Frederick Crosby Brush, Dental Brief.*

A REINFORCED WEDGE.

This form of wedge is particularly applicable for cases wherein it becomes necessary to wedge across wide spaces, as in regaining the space of a missing tooth. It consists of the usual piece of cottonwood which has been compressed with the pliers or vise and carved to the desired size and shape. Through the wedge thus prepared a hole is drilled, and into it is threaded and compressed a large piece of ordinary separating rubber. The principle of it is, that after the wood has expanded to its limit it will relieve the pressure on the rubber, which will attempt to resume its original shape, thus forcing the sides of the wedge farther apart.—*Frederick Crosby Brush, Dental Brief.*

TO HOLD CROWNS WHILE POLISHING.

Cut a pine stick to fit the crown loosely, coat it with shellac by heating both in a flame, then force it into the crown, previously filled with a mix of salted plaster, and it is ready for the buff. To remove the crown heat in a flame, and with a napkin to protect the fingers, pull it from the stick. Lac on the stick prevents the wood from drinking in the water of the plaster, and when heated, makes the stick easy of removal. The salt hardens the plaster immediately, and the heat generated in the buffing and that of the flame perfects it, and as a final result the plaster comes away in scales, leaving the inner surface of the crown as clean as when first made ready for the polishing process.—*Office and Laboratory.*

TOOTH-BRUSHES.

I have no use for the soft, mushy tooth-brush sometimes advocated, except in very rare cases. I want a tooth-brush with some backbone to it, with some substance to it. It should be small, but full of good stiff, elastic bristles. Small, to reach every part of the mouth; stiff, to give good stimulating friction to both tooth and gum; straight, not curved, because then best adapted to reach the surface on both sides of the arch. It should be used in all directions, vertically and horizontally. The "tooth-pick" idea, associated with the dozen or more little bristles at the end of the curved brushes, does not appeal to me at all. For daily use to remove particles of food, to brush out the softer *debris*, it is a necessity. In order to keep it in good condition for this purpose and preserve its vitality longer, one should have two or three always in commission for alternate use. As a polisher, however, the tooth-brush is utterly inadequate, because even with the use of a good powder it fails to entirely remove the adhesive deposits, which are so prevalent and so mischievous to the teeth, and there are too many places inaccessible to the brush.—*Chas. B. Rohland, Dental Review.*

SOLDERING PLATES TOGETHER OBJECTIONABLE PRACTICE.

I object to soldering plates together to stiffen them. A plate that is so constructed has lost all its elasticity; when bent it stays bent. It is better to have one plate of sufficient thickness to give the stability required than to solder two plates together. I do not object to the use of 18-k. gold in the mouth. I use it a great deal, especially in the lower teeth. There is one great objection to the use of a higher grade gold; it is softer, more easily adapted to the

mouth, and consequently cannot bear the strain in the mouth so well. For partial plates I frequently use the alloy of gold and platinum called cheap metal. If rubber adheres to 18-k. gold, so much the better; that is the gold to use, and not the higher grade.—*G. W. Haskins, Dental Review.*

ABSCESS TREATMENT.

A prolific source of septic pericementitis is escaping micro-organisms and ptomaines from putrescent root-canals, but in many instances abscesses may be prevented by the use of proper remedies at the proper time. The first duty is to open the canal, and let the confined gases escape. Both the tooth and the infected periodontal membrane require treatment. To aid nature in readjusting the abnormal condition the following prescription will prove useful:

Sig.—Take a teaspoonful three times a day after meals.

The teaspoonful may be added to half a wineglassful of water to further dilute the potassium iodid.—*J. P. Buckley, Dental Review.*

DENTITION.

By Rupert G. Beale, D. D. S., Philadelphia, Pa.

The greater part of the ailments of the first year of life have been very properly attributed to dentition. Diarrhoea, high fever, which may cause cephalic congestion, are diseases which at this period are clearly dependent on dentition. In cases of difficult dentition, a crucial incision of the gum over the tooth and the application of Glyco-Thymoline are the surest means of producing amelioration. The use of solutions containing cocaine is not to be considered by the conscientious dentist. Dentition being a cause of digestive derangement, it is best not to wean the child during the successive periods of the eruption of the teeth. The best time for weaning is after the first molars (about twelfth month) or canine teeth (fifteenth month) have appeared.

In cases of difficult dentition, I have had most excellent results from the use of Glyco-Thymoline. It keeps the child quiet, reduces inflammation of gums and prevents digestive disturbance. My method of applying it is to order the mother to procure a small, flat sponge, such as potters use, of tough fine texture, which may be procured at any first-class pharmacy. This is fastened with tape so that the child cannot swallow it and being moistened with a 25 per cent. solution of Glyco-Thymoline, the child is allowed to bite upon it and suck it which it will do readily. I have tried it in a great number of cases and it has invariably afforded instant relief.

Personal and General

Fire.—Dr. Sidney Smith suffered loss to the extent of \$600 from fire August 1 at Paducah, Ky.

Serious Accident.—Dr. A. H. Hitchcock, of Albany, Wis., was severely injured by explosion of gasoline launch.

Alden-Lence—Dr. William Hayes Lence and Miss Mary Walton Alden, both of Jonesboro, Ill., were married August 2.

Burglars.—Dr. J. A. Peasley's dental office was robbed of \$75 worth of gold at Marinette, Wis., July 9.

Chicago College of Dental Surgery has been affiliated with the University of Valparaiso. Both schools are to be congratulated.

Robbed by Negro.—Dr. Jas. H. Case, a dentist in St. Louis, was robbed by a negro burglar July 31 of \$75 in money and a watch and chain.

Lemon Extract Kills Dentist.—An overdose of lemon extract caused the death of Dr. I. C. Hoke of Bridgeport, Ind. He was 50 years old.

Heft-Seit.—Dr. George Stanly Heft a millionaire dentist of Bridgeport, Conn. and Miss Marie Seit, of Philadelphia, were married in Camden, June 10th.

Killed.—Dr. Edward Rule, a dentist in Kansas City, was crushed to death by the wheels of a street car July 29. He was a passenger on the car which killed him.

Dr. Kirk Retires. Dr. P. S. Kirk who has practiced dentistry at Morrison, Ill., for thirteen years, has sold to Dr. H. A. Bradley, and will retire on account of failing health.

Robbed.—Dr. W. A. Dorland of Grand Rapids, Mich., suffered the loss of considerable amount of gold through thieves who entered his office during his absence July 13.

Robbed.—Dr. F. C. Babcock's dental parlors were visited by burglars July 10. What money the drawer contained was taken together with gold crowns and a quantity of gold leaf. The loss is estimated at nearly \$50.

Harmless Lady Assistant.—The advertisement of a Springfield (Mo.) dentist says: "Gas and vitalized air for extracting. Perfectly safe and harmless lady in attendance."

To Europe.—Dean Trauman W. Brophy, of the Chicago College of Dental Surgery, sailed July 25 for Europe and the International Dental Federation which convenes at Hanover, Germany, Aug. 7.

Dentist Guilty of Murder.—Dr. Louis Zorn, a dentist, who in 1903 shot and killed Albert Sechrest, his tenant at Kansas City, was found guilty of murder in the second degree and sentenced to fifteen years in the penitentiary July 15. Dr. Zorn, who is 50 years old, is wealthy.

Chicago Dentist Honored Abroad. Dr. John N. Sandblom will be dean of the dental department of the University of Christiania, Norway. Dr. Sandblom is a graduate of the Northwestern university dental school and has practiced in Chicago since 1900. Last May he went to Europe

and lectured on postgraduate dental work, making a reputation that resulted in his call to the Norwegian university.

Dentist Falls from Bluff.—Dr. Whitney, a dentist of Wichita, Kan., was seriously injured at Arkansas City, August 2. He was a member of a party of Wichita pleasure seekers who were taking a trip down the Walnut river in a gasoline launch.

The doctor was up on the bluff when he slipped and fell over the edge of it to the rocky ground below, a distance of between fifteen and twenty feet. He received a bad fracture of the skull and also severely injured the right knee.

Both Coming and Going.—“What's that noise?” asked the visitor in the apartment house.

“Probably some one in the dentist's rooms on the floor below getting a tooth out,” said the host.

“But it seems to come from the floor above.”

“Ah, then it's probably the Popleys' baby getting a tooth in.”—*Philadelphia Press*.

Holds School Not Liable.—Students of Northwestern university who suffer injuries while at their studies cannot recover damages from the institution, according to an opinion given in the Appellate court by Judges Ball, Baker, and Smith July 11. The decision was given in the case of Robert Smith Parks, a dental student who suffered the loss of an eye by an explosion in the chemical laboratory at the university in 1901.

The Appellate court holds the university funds are held in trust for the purposes of education, and to pay damages would be in violation of the trust.

The suit was based on alleged ignorance and neglect of his instructor and on his having paid fees of tuition for his instruction there.

Quack Fined.—On a charge of practicing dentistry without the necessary diploma, Dr. Oakley was brought before Judge J. A. Copeland at Vermillion, S. D., and fined \$35. Oakley had been operating a tent show in rural precincts.

Dr. E. C. Frank, the dentist, who has an office in the Ilgenfritz building, St. Louis, is regretting the loss of \$35 worth of gold, which a bold sneak thief stole from his place of business last evening.

In Case of My Death.—Dr. Carelton A. Smith committed suicide July 6 at Oneida, N. Y., by shooting himself in the head. A freshly written note directed to Mrs. Smith was found which evinced that the doctor had contemplated suicide for some time. The note left instructions regarding the settlement of his estate, and was headed “In Case of My Death.” Dr. Smith was born at Little Falls about 60 years ago. Most of his life had been spent in Oneida, where if he had lived until September, he would have practiced dentistry for 40 years. During the past few years he had been interested in several hotel ventures at Sylvan Beach, and about a year ago he rented the Allen House in this city, of which he was the proprietor at the time of his death. Dr. Smith was in Ford's theater at the time Lincoln was assassinated.

Guthrie, Okla., Dental Board.—Gov. Ferguson announced the territorial

board of dental examiners for Oklahoma, July 17th. The personnel of the board is: J. O. Waddell, Kingfisher; R. H. Pendleton, Norman; A. C. Hixon, Guthrie; Fred D. Sparks, Ponca City, and A. M. Deitrich, Oklahoma City.

Chicago Dental Notes.—Dr. White is still pulling out winners for the Chicago White Sox. Dr. Casey is spending a few days in New York, the guest of the Brooklyns. Dr. Hub Hart has not yet "filled in" behind the bat for Chicago, but whenever a cavity occurs in the backstop department he will go to work.

Extraction Causes Death.—Elmer Retylaff, a 9-year-old boy had a tooth extracted in Detroit. After the dental operation it was found that blood kept flowing freely from the cavity and the usual means to stop it were used, but without result. The flow continued until the boy died. He was 9 years old. The blood seems to have been so thin that no clot would form in the wound.

New Texas Board.—The governor has appointed the following dentists on the State board:

To serve for one year, Drs. T. L. Westerfield, Dallas; H. E. Lubben, Galveston; W. G. Jackson, Abilene.

To serve two years, Drs. C. C. Weaver, Hillsboro; S. G. Duff, Gainesville; J. H. Grant, Palestine.

End of the New Ulm Murder Trial—After being out three hours, the jury in the case of Dr. George R. Koch, a dentist of New Ulm, Minn., tried at Mankato, Minn., on the charge of murdering his competitor, Dr. Louis A. Gebhardt, returned a verdict of not guilty. The trial had lasted twenty-six days.

The crime which resulted in the trials of Dr. Koch was committed in the dental office of the victim on the night of Nov. 1, 1904, shortly before 10 o'clock. The cries of the murdered man attracted attention of several persons, who hurried to the office in time to see the murderer turn away from the prostrate form of his victim. Before the locked door to the office was forced the murderer escaped by jumping from a rear window, without being identified.

Persons who first entered the office of the murdered man found a handkerchief, stained with blood, bearing the initials of G. R. K., a lead pencil such as Dr. Koch was known to have received a few hours before the murder, and a hammer, afterward identified by a witness for the state as the property of Dr. Koch's father. A package containing poison which had been mailed to Dr. Gebhardt a few days before the murder was also identified as bearing the handwriting of Dr. Koch.

Upon this evidence Dr. Koch was arrested, charged with murder in the first degree. The first trial at New Ulm was called Dec. 26, 1904, and resulted in a disagreement of the jury. The second trial was held here starting May 17, 1905, and also resulted in a disagreement. The present trial began July 6.

Dr. Koch is a member of one of the best families in New Ulm, while the murdered man was well known in Black River Falls, Wis., where he spent his boyhood days. Both were educated in Chicago.

Editor of Dental Era a Benedict—When Dr. Herman Prinz returns from his bridal tour to his office, 623 Century Building, he will be confronted with a situation which will give him a deep insight into the fun-loving qualities of the American people. He will find his office door placarded with all sorts of inscriptions, documents and pictures, with enough advice to make his life happy forever, if he only follows it.

Dr. Prinz is the principal in one of the prettiest romances that ever came to a climax in St. Louis. He was married a few days ago to beautiful Miss Lillie Koop of 3845 Russell avenue, and the happy pair are now sailing on the lakes wholly oblivious to the jokes the friends of the physician are playing on him here.

A dozen years ago Dr. Prinz came to this country from Germany. He was too much of a student to pay any attention to the charms of the other sex. He had graduated in dentistry, medicine, pharmacy and was delving still deeper into the world of science, digging out new truths.

In the seclusion of his office he had pored over the prosaic pages of the scientific books night after night for years and years, and was classed among the world's best educated men. His brother had risen to the eminence of chemist for the city of Paris and he held a like position for the Peroxident Chemical Company of St. Louis. His education was thorough and complete in all but one respect—he had never learned to love.

LOVE TO HIM A SEALED BOOK.

To Dr. Prinz there had been nothing worth acquiring but scientific knowledge. The world of love to him was a sealed book, and much as he knew about the physical makeup of man there was a mystery about this tender emotion that he could not fathom.

About six months ago Dr. Prinz went to the home of Miss Koop's parents to board. His physician friends warned him that there was a beautiful girl in the house and that he would fall a victim to her charms if he did not look out. Dr. Prinz scouted the idea. He had been too studious to learn much about American customs, outside of the medical schools.

But it was not long after he had removed to South St. Louis until he began "to sit up and take notice" of the pretty girl. His friends suspected that he was getting interested in something besides science, as he began to be irregular in his arrival at his office.

Finally he took one of the physicians who has an office on the same floor into his confidence. He confessed that there was a peculiar sensation heaving around in his breast and that it was about to become his master. He asked other physicians how they felt when they fell in love with the women they afterward married. They knew from his descriptions of the emotions which throbbed in his breast that Dr. Prinz was falling deeply in love—though at the age of 33 or 36 years he had never before experienced the delights of this maddening power which brings men to their knees before the throne of beauty.

CUPID WINS IN A THEATER.

Dr. Prinz said that he was struck while the two were looking over a theater program.

"You scamp, you never told me that you were going out with the young lady," his friend rebuked him. Then Dr. Prinz told more and more and a few months later came to his office dancing with delight.

"I kissed that girl and we're engaged," he announced.

From that moment Dr. Prinz did not enjoy much peace of mind. There are a dozen physicians on the floor who elected to have some fun at his expense.

They made his life a burden with their taunts, but Dr. Prinz had become a stoic and bore the brunt of their jokes with heroic fortitude.

When the climax of his first and only love affair occurred a few days ago and he locked the doors of his office to make his bridal tour of the lakes his physician friends planned to give him a warm reception upon his return.

One of the placards expresses sympathy for the new benedict as follows:

"Poor Prinz. And he is so young. She must treat him well. He was raised a pet."

Another reads: "Yum! Yum! I'm just married. Don't care if I never have another patient." And then follows advice from a married man telling him to avoid his first quarrel with his wife.

Dr. Prinz is a member of the faculty of Washington University and is regarded as one of the most thorough medicine men of the city.—*St. Louis Chronicle*.

REMOVALS.

Dr. E. J. Dunaway from Paris, Mo., to Madison, Wis.; Dr. C. E. Whiting from Balaton, Minn., to Faribault, Minn.; Dr. Clarence Cofield from Rising Sun, Ind., to Indianapolis, Ind.; Dr. J. A. McIndoe from Iron River, Mich., to Norway, Wis.; Dr. M. E. Bancroft from Minneapolis, Minn., to Hawley, Minn.; Dr. Frank Leonard from Belleville, Ohio, to Bucyrus, Ohio; Dr. L. G. Gross from Chippewa Falls, Minn., to St. Cloud, Minn.; Dr. Eugene D. Swope from Union, W. Va., to Welch, W. Va.; Dr. Smith from Ottawa, Ill., to Galesburg, Ill.; Dr. H. M. Johnson from Harvard, Ill., to Walworth; Dr. Brownfield from Lincoln, Neb., to Fairbury, Neb.; Dr. Seward Welch from Paulding, Ohio, to Delaware Ohio; Dr. J. E. McKahan from Menominee, Wis., to Wausau, Wis.; Dr. B. H. Spurlock from Atlanta, Ga., to Loganville, Ga.; Dr. R. O. Richardson from Mt. Vernon, Ill., to Centralia, Ill.; Dr. A. E. Hemphill from Fremont and Hedrick, Iowa, to Anita, Iowa; Dr. C. P. Brown from Philadelphia, Pa., to Portland, Me.; Dr. Geo. W. Rial from Cannelton, Ky., to Owensboro, Ky.; Dr. C. A. Burbridge from Traverse City, Mich., to Grand Rapids, Mich.; Dr. L. C. Austin from Milan, Mich., to Britton, Mich.; Dr. A. F. Keeton from Pleasantville, Iowa, to Knoxville, Ill.; Dr. T. P. Gunning from Kewanee, Ill., to Princeton, Ill.; Dr. R. A. Greensawalt from Springfield, Iowa, to Manchester, Iowa.

PATENTS

791,668. Prophylactic Dental Appliance. Frederick H. Apel, Athol Springs, and Stanley A. Merkley, Buffalo, N. Y. Filed Feb. 18, 1904. Serial No. 194,287.

Claim.—1. A dental appliance comprising a two-part case hinged together at one end, a tooth-brush having its handle pivotally attached to the free end of one part of said case, a cross-bar secured to the other part of the case near the free end thereof, and a dentifrice paste-tube having its closed flat end bent around said cross-bar, said two parts of the case being disposed at an angle to each other when the brush is being supplied with said paste to allow the said tube to be swung into contact with the brush.

2. A denture comprising a base, an attaching-plate having a base portion end, a floss-silk holder pivotally attached to the free end of one part of said case and having means for holding a quantity of floss-silk under tension, and a dentifrice paste-tube having its closed flat end secured to the other part of the case, thereby permitting said tube and the floss-silk under tension to be brought into contact.

791,859. Dental Separator and Tooth-Holder. Elias D. Barnes, Enfield, N. C. Filed Feb. 1, 1905. Serial No. 243,646.

Claim.—1. A dental separator, comprising separating-prongs, means for separating the teeth thereby, and a frame carrying the same having bearing-surfaces for both the upper and lower jaw substantially as described.

2. A dental separator, comprising separating-prongs, means for separating the teeth thereby, a frame carrying the same, bearing-surfaces for both the upper and lower jaw and means for adjusting these bearing-surfaces to or from each other substantially as described.

3. A dental separator, comprising separating-prongs, means for separating the teeth thereby, a frame carrying the same, bearing-surfaces for both the upper and lower jaw and means for adjusting one of these bearing-surfaces laterally along the teeth substantially as described.

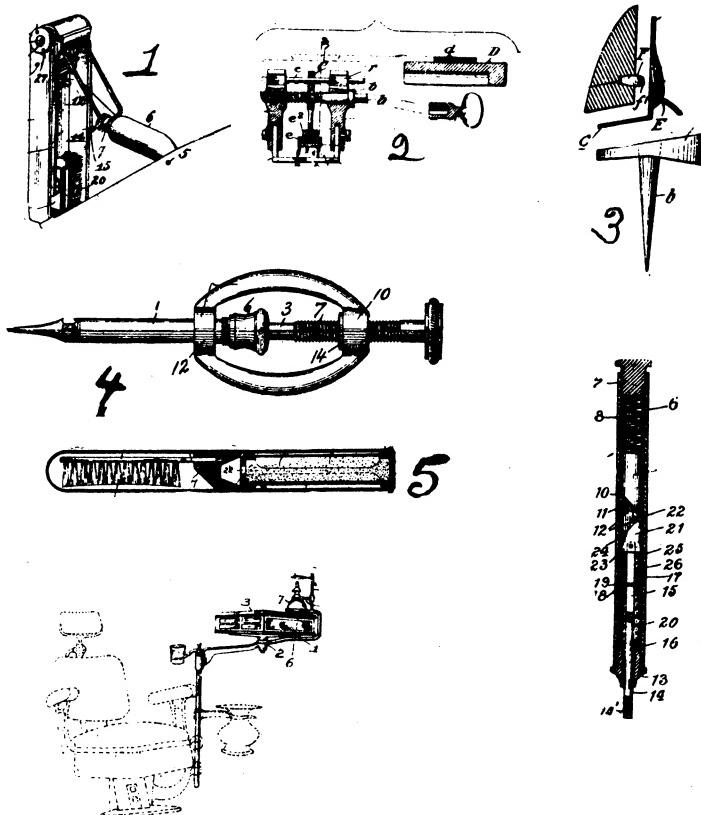
792,618. Artificial Denture. Finis E. Roach, Chicago, Ill. Filed April 9, 1903. Serial No. 151,697.

Claim.—1. In an artificial denture the combination with a base, of a facing of porcelain or the like, a pin secured therein, a head thereon directed obliquely and downwardly from the inner side of the facing and means for securing the facing in position upon the base comprising a downwardly and outwardly inclined diaphragm rigidly attached to said base and having resilient edges thereon adapted to engage the pin.

2. A denture comprising a base, an attaching-plate having a base portion adapted to be secured on the base and a part directed axially of the denture and having a recess in said axial portion inclining downwardly and outwardly, a diaphragm secured on the base and protruding through said recess, a facing of porcelain fitted to said attaching-plate and means thereon adapted for engagement with said resilient diaphragm and acting when pressure is applied thereto to firmly engage the same in operative position.

792,836. Dental Obtunder. Burt A. Loveless, Fulton, N. Y. Filed Oct. 25, 1904. Serial No. 229,926.

Claim.—1. A dental obtunder comprising a cylinder containing an anesthetizing agent and having a hollow needle-point on one end, a piston movable in the cylinder and having its rod projecting through the end opposite the needle-point, the outer end of the piston-rod being screw-threaded and provided with a handpiece, and a yoke secured to the cylinder and having a threaded hub receiving the screw-threaded portion of the rod.



2. A dental obtunder consisting of a cylinder having one end provided with a hollow needle-point, a threaded hub secured to the opposite end of the cylinder in axial alinement therewith, and a screw engaged with the threaded hub and having one end entering the cylinder and its other end provided with a handpiece whereby the screw is rotated.

793,259. Pocket Dentifrice-Holder. Charles W. Wilson, Toledo, Ohio. Filed Feb. 15, 1904. Serial No. 193,508.

Claim.—1. In a pocket dentifrice-holder, the combination with a casing having a socket-bore of a holder adapted to be housed in the bore of the

casing, said holder comprising a shell provided at its inner end with a detachable perforated head, and at the outer end with an enlarger head adapted to limit the distance of insertion of the shell into the casing, and form a grip for withdrawing the shell therefrom.

2. In a pocket dentifrice-holder, the combination with a tubular casing closed at one end and open at the other of a dentifrice-holder adapted to be inserted within the casing, said holder comprising a shell having an enlarged outer head, and a detachable inner head provided with a reduced central opening, and a longitudinal incut through the wall of the shell extending between the heads.

12,365. Dental Plugger. Alexander W. Wimmer, Chicago, Ill. Filed Aug. 26, 1904. Serial No. 222,341. Original No. 755,425, dated March 22, 1904.

Claim.—1. In a dental plugger, the combination with a tool-carrying member and a hammer member mounted for relative longitudinal movement, of an impact part carried by one of said members arranged to stop the relative movement of said members, to transfer a blow from the hammer to the spindle member, and movable to release the said members from further relative movement.

2. In a dental plugger, a tool-carrying member and a hammer member mounted for relative longitudinal movement, movable means carried by one of said elements for sharply stopping the said relative movement of the elements, said means being movable to successively stop the movement of the said members and release them for further movement.

793,233. Lamp-Holding Bracket for Dental Chairs. John J. Ryan, Paris, France. Filed Aug. 11, 1904. Serial No. 220,400.

Claim.—1. In a support for a lamp, a bracket comprising a horizontal arm designed to be pivoted at one end and bent upwardly and inwardly at its opposite end, the free end of the inwardly-bent portion forming a seat for a lamp, a standard secured to said inwardly-bent portion, and a yoke adapted to embrace the neck of a lamp and slidingly mounted on said standard.

WANT ADS

**Advertisements in want ad columns are five cents per word.
If you want to buy or sell, employ or be employed, you will get
good results from this column.**

WANTED

To buy a dental practice in a town or city of 2,000 up.
Address F. S. Fritz, D. D. S., Caro, Mich.

Corunna, Mich., Aug. 11, 1905.

American Dental Journal:-

*Enclosed please find stamps to pay for "want ad." Have had splendid
results from it.*

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FOR SALE.

Dental practice or outfit at invoice. 18 years in one location. \$8000 average yearly practice for that time. 50% crown, bridge and inlay work. Want to retire. For full particulars write Dr. H. J. Hill, Alma, Neb.

FOR SALE.

\$100 takes location and furnished office in Illinois town of 1400. One other dentist. Address "Country" care of American Dental Journal.

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Wishing to retire from practice this fall, I will sell modern outfit at invoice. Monthly payments, if desired. Address "Illinois," care American Dental Journal.

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Four thousand-dollar cash practice in a growing Iowa city of 14,000. Address Lee, care American Dental Journal.

FOR SALE CHEAP.

Practice and part of outfit in growing Iowa town. Bargain if looked into at once. Address C. K., care American Dental Journal.

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Dental practice, including chair, cabinet, instruments, office furniture and fixtures; will sell for one-half cost. Good Michigan town; no competition. Address, M. A. K., care American Dental Journal.

FOR SALE.

Fifteen hundred-dollar practice in a growing town of 2,000 in Piedmont Section of North Carolina. Address H. A. F., American Dental Journal.

FOR SALE.

\$225 takes office and \$2,000 practice. Best location in town of 23,000. Rent \$10. Have gas and electricity. Box 93, Guthrie, Okla.

FOR SALE.

Complete dental outfit, furniture, instruments, good condition, will sell at sacrifice. Good town of 18,000. Address X. Y. Z., care American Dental Journal.

FOR SALE.

\$2,000 dental practice in Western Iowa town of 4,000. Gas, electricity and city water. Price, if sold before Sept. 1, \$200. Address Canine, care American Dental Journal.

WANTED.

By graduate Northwestern University Dental School—Situation or consolidate with a first-class office. Seven years' continued experience. Address Box 392, Bloomfield, Ind.

INDEX TO ADVERTISEMENTS.

	Page
American Hard Rubber Co., New York	14
Acestoria	6, 7
Adrian Spear Rutherford	33
American Cabinet Co., Two Rivers, Wis.	12
Antidolar Mfg. Co., Springville, N. Y.	44
Antikamnia Chemical Co., St. Louis	21
"Bargains"	22, 23
Carborundum Rubber Disks	34
Caulk, The L. D. Co., Philadelphia, Pa.	5
Chicago College of Dental Surgery, Chicago, Ill.	15, 41
Clark, A. C. & Co., Chicago	64
Croselmire & Ackor Co., Newark, N. J.	31
Crocker, Samuel A., & Co.	43
Dayton Dental Supply Co., Dayton, O.	31
Dee, Thomas J. & Co., Chicago, Ill.	30
Dental Suction Co., Loudonville, O.	21
Dentist's Card Account System	48
Dentists Supply Co., New York	52, 53, 54
Electric Sterilizer Co., St. Paul, Minn.	40, 49
Eureka Chemical Co.	30
Gesswein F. W. Co.	20
Goldsmith Bros., Chicago, Ill.	28 and Outside Back Cover
Dr. Green Chemical Company, Ionia, Mich.	39
Hall & Ruckel, Sozodont	00
Higgins Dental Mfg. Co., Bellevue, O.	10
Hisey Dental Mfg. Co., St. Louis, Mo.	34
Hull Carbolated Dental Disk	49
Hare's Dental Device Co.	27
Indiana Dental College, Indianapolis, Ind.	40
Ivory's Specialties	27
Jennelle Chemical Co.	44
Kirkwood Mfg. Co.	13
Kress & Owen Co., New York	00
Lambert Pharmacal Co., St. Louis	0
Lauderdale Crown System	47
Lavoris Chemical Co., Minneapolis, Minn.	8
Lee Smith & Son, Pittsburgh, Pa.	9
Louisville Dental Laboratory & Mfg. Co.	46
Michigan Drug Co.	16
Mills Compounding Co.	42
Morgan, Hastings & Co., Philadelphia	14
Mounted Carborundum Points	46
National Dental Improvement Co., Mt. Vernon, O.	28
Nelms, Henry & Sons, Philadelphia, Pa.	51
Oakland Chemical Co.	Second Cover
Paragon Dental Mfg. Co., Racine, Wis.	24
Pustolene, J. A. Sprague	42
Randall Falchney Co.	32
Sanitol Company	1, 2, 3, 4
Scharmann, Gustav, New York, N. Y.	11, 17
Schenkenberg, Eugene, Racine, Wis.	36
Shafer-Pierce Co., Minneapolis, Minn.	41
Somnoforme, E. de Trey & Sons, New York	55 to 63
Standard Dental Mfg. Co., New York	29
Sterion White Alloy Co., Chicago, Ill.	35
Strout, J. M., Portland, Maine	21
Tenax	40
Teague Supply Co., Augusta, Ga.	50
Twentieth Century Teeth	9, 52, 53, 54
University of Illinois	18, 19
Warner Motor Co.	26
Webster Dental Co., Buffalo, N. Y.	37
WedgeLock Tooth Co.	25, 45
Windsor Dental Company, Chicago	14
Willjams J. A.	36, 38

